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J. G. B. ought not to remove the canceling ink from postage stamps, as it may lead to fraud. -G. S. can cleanse his iron for galvanizing by using the dip described on p. 107, vol. 31.-J. P. McC. can clean shells by following the directions on p. 122, vol. 27.-J. M. C. will find directions for casehardening on p. 202, vol. 31.-F. E. can deodorize butter by following the directions on p. 119, vol. 30.-F. W. K. can use rubber varnish for ma king waterproof cloth. See p. 11, vol. 32.—D. H. can separate silver from lead by the method described on p. 138, vol. 32.—G. M. will find a formula for thickness of a boiler on p. 155, vol. 32. Read Camus on the "Teeth of Wheels."-R. R. B. ought to know that no instrument can possibly point out where gold, silver, lead, etc., lie buried in the earth.-J. T. C. can dissolve pure rubber in benzine, naphtha, or carbon bisulphide.-D. can remove stains of iron rust from fabrics by the method given on p. 170, vol. 27.-H. B. can fasten leather to wood with marine glue. See p. 282, vol. 31.-J. A. W. can fasten chromos on thin canvas by following the directions on p. 91, vol. 31.-A. A. will find directions for separating aluminum on pp. 91, 116, vol. 32.-R. McA. can exterminate cockroaches by using the recipe on p. 43, vol. 31.-A. K. should consult Küstel on the "Nevada and Cal ifornia Processes for Gold and Silver Extraction." -W. A. P. can galvanize his iron articles by the method described on p. 346, vol. 31.-I. G. will find a recipe for a hair stimulant on p. 393, vol. 31.-G. E. K. Jr. will find directions for making a black walnut stain on p. 90, vol. 32-G. C. H. can make windowglass opaque by the method described on p. 264, vol. 30.-T. H. L. can utilize old rubber by the process described on p. 349,vol. 26.-J. S. F.can fill and polish his black walnut furniture by the method described on p. 315, vol. 30, and 347, vol. 31. -W. C. can render wood fireproof by the process detailed on p. 280, vol. 28.

(1) P. C. asks: What is the chemical read tion resulting from the adding of tartaric acid after bicarbonate of potash is added to butter? A. Carbonate of potash, being an alkali, neutralizes the lactic and butyric and other acids in the rancid butter, but the excess of alkali used has a burning taste. The tartaric acid added decom-poses the potash salt, liberating carbonic acid, and the resulting tartrate of potash does not offend the sense of taste.

(2) S. R. asks: 1. For what particular purpose are lime and chalk used in the composition of soda glass? A. The addition of lime to glass diminishes its fusibility, while it increases its luster. but the addition of an excess of lime is apt to make the glass milky when cold, although it may be perfectly clear while hot. 2. What is the process that has been patented by a French gentle man foradding strength and elasticity to the glass? A. The agent of M. Bastie, the inventor, lately exhibited specimens of the glass at the office of the SCIENTIFIC AMERICAN, New York, and subjected the same successfully to the most remarkable tests. The process for treating the glass has not yet been made public.

(3) H. B. W. asks: How is rubber melted so that it can be run into molds? A. The rubber is simply rendered soft by passing between rollers heated by steam, in which state it is pressed

made with pure clay, or such as contains little or valve $1\frac{3}{16}$ inches in diameter, the valve being be no oxide of iron and is free from calcareous matter. The best clavs contain the most silica, yet crucibles of pure clay are not absolutely infusible; and in the high temperature of a blast furnace. they sometimes soften so much as actually to fall into a shapeless mass. This defect can be somewhat remedied by mixing the clay with graphite or coke; either of these substances form a kind of solid skeleton, which retains the softened clay and prevents its falling out of shape.

(7) S. F. H. & Co. say: We have some eather lined with blue cloth, such as is used for carriage curtains. The color of the cloth is blue, and it rubs off. Can the color be made so as not to come off by applying a solution to it? A. Try dipping it into a solution of india rubber in naph tha.

(8) A. C. J. asks: Are the numerals and punctuation marks commonly used in telegraphy a A. The numerals are, but punctuation marks are not very generally used, except the full stop.

(9) S. S. W. asks: How long should locust eeds be boiled before planting? A. Take three times as much water as you have seed, by measure Boil the water, and pour it boiling hot over the seeds and let them soak till the next day: then plant them. The plants are as tender as melons, and the least frost will kill them, so do not plant too early. Some of the plants will have thorne, and some not; save the thornless ones to plant for shade trees; the rest you can use for hedges or throw away, for they are too disagreeable to keep in a civilized community. Both the thorny and thorn-less plants are perfectly hardy, require no shelter after the first start, and are about the safest tree to transplant (at any age) that grows in this lati-tude; while their foliage and peculiar growth render them Elmost indispensable where variety is desirable.-H. H.

(10) W. Y. asks: What tools does a man need to run a small engine with? A. A hammer, an assortment of files. a flat chisel, a cape chisel, A, If the temperature is constant, the pressure scrapers (1/2 round and flat), a straight edge, an assortment of wrenches, a screw driver, and a belt punch.

(11) F. W. asks: In manufacturing our mmon red brick, is there any way of coloring them, either byglazing or mixing, to produce some pleasing tint, without adding materially to the expense? A. This can be done by facing them with a coloring preparation, as is now done in the case of encaustic floor tiles, but not without considerably enhancing the price.

(12) W. R. H. asks: How much greater is the resistance of the ordinary railroad rail, made of wrought iron, than that of a rail of the same size and length of Bessemer steel and of malleable cast iron, respectively, in respect to resisting the shocks or strains of locomotive or car wheels when in motion? A. The steel rail is about 1.5 times as strong as the wrought iron one, within the limit of elasticity. Mallcable cast iron is not well suited to resist shocks.

(13) H. R. T. asks: Which is correct, "buhr stone" or "burr stone?" A. Both are correct, but buhr stone " is the more usual way of writing it.

(14) R. C. M. says: I am putting in two 8x l0 engines, to run together, and I wish to use cistern water. If I exhaust into a four inch pipe, extending from the cistern upward, and keep a small stream of cold water running through it from the second story, 10 feet above the engines, will it condense the most of the steam? A. This plan will not answer. Your best plan would be to use a proper condenser. 2. How will I get most power out of two 8x10 cylinders, coupled rigidly together or run iodependently and connected with one line shaft with belts? Part of the time I shall use only one cylinder for light work. A. It would no doubt be better to run them independently.

How can I ascertain the number and claims of a patent? A. Either by making a search of the records, or engaging some one to do it for you.

(15) A. A. asks: I have a steam heater of the following capacity, and desire to know what pressure it will stand without bursting. It is 18 inches long, 14 inches wide, $2\frac{1}{2}$ in hes deep and $\frac{1}{2}$ inch thickness of the iron. The boiler pressure is 45 lbs. The pipe that connects with the heater is % of an inch in diameter, and is about 60 feet in length. The exhaust pipe is 1/2 inch in diameter, A. Under the conditions and is not quite free. stated, the heater will have sufficient strength.

(16) D. asks: Can the area of an octagon inside of a circle be ascertained with mathematical exactitude, if the diameter of the circle be known? A. Yes. It is composed of eight equal isosceles triangles, of which two sides and the included equal to the radius of the circumscribing circle, and the included angle is 1/6 of 360°, or 45°.

[May 22, 1875.

1% inches from the fulcrum? A. You can work it out for yourself by the aid of the following rule: Multiply together: (1) The pressure of steam, the area of valve, and the distance of center of valve from fulcrum. (2) The weight of the valve, and the distance of its center from the fulcrum. (3) The weight of the lever, and the distance of its center of gravity from the fulcrum. (4) Add together the products obtained by (2) and (3), and subtract the sum from the product obtained by (5) Divide the difference by the weight of the (1). ball.

(19) C. H. D. asks: I enclose you a photo graph of a windmill which is erected on an eminence near York, Pa. It was built in 1870 by an ingenious German, and has been regarded as a curiosity, being the only windmill for many miles around. The sails are not constructed on the principle put forth in your recentarticle on windmills, but have a uniform inclination to the plane of revolution. They seem, however, to be very efficient and I am informed that the power varies from 5 to 10 horse power, according to the velocity of the wind, the sails being 3 feet wide, and the diameter of the wheel 25 feet. The shaft is inclined to the plane of the horizon at an angle of about 6° and is arranged to swing around a vertical shaft, when the wheel is shifted to face the wind. The power is transmitted by a pair of bevel wheels, and is utilized for crunching bones. This windmill is a model of workmanship and utilizes a power which is certainly cheap. A. We have no doubt our readers will be interested in this account; for while it is probable that a wheel constructed with the proportions noted in our recentarticle would be somewhat more efficient, this is a little simpler to construct

(20) P. F. asks: In a cylinder 6 feet high containing 6 cubic feet of air, how many lbs. pressure on the piston will be required to compress the air into 1, 2, 3, 4, 5 feet of volume respectively? varies inversely as the volume.

(21) L. H. R. asks: 1. Can you explain the principle of the gyroscope? A: It may be explained generally on the principle that, though the force of gravity is constantly acting downwards, there are other forces with which the force of gravity is resolved. See p. 91, vol. 31. 2. Was there a marine governor built some time ago upon that principle? A. There have been several.

If a locomotive engineer be called upon to stop his engine as soon as possible, would it be advisable to shift the eccentric, thereby causing great resistance at every stroke, until the engine has stopped ? A. Itwould be better to shut off the steam, and apply the brakes.

(22) J. W. H. asks: What is the difference in strength between an iron and a steel shaft, 4% inches in diameter? How far will it spring without breaking, being 3 feet long between boxes? A. The steel axle will be about twice as strong. It would not be advisable to strain the shaft so as to spring it sensibly; and, though it might not break at once, it would take a constantly increasing set.

(23) M. P. S. says: We have a 60 horse power horizontal return tubular boiler, set in brick in the usual way. Length is 15 feet, diameter 54 inches, and there are 56 three inch tubes. At rear of boiler is a combustion chamber, 3x5 fect, and the chimney is on one side, at front of boiler. The heat passes under the boiler, returns through tubes, and passes through a square flue, 12x12 inches, into the round iron stack, 48 inches in diameter and 36 feet high. This stack is lined with brick for about 20 feet up, reducing the area to about 40 inches. The draft is sluggish, and the cast iron covering of the rear combustion chamber has given way with the excessive heat. A. We think the stack is too large, and you might improve matters by contracting it at the bottom.

(24) P. A. asks: What is the correct rule for getting an engine into line and squaring the shaft? A. Set up two lines, one parallel to the axis of the cylinder or through the cylinder, if possible, and the other perpendicular to the first. in the same plane. These are reference lines to measure from, to bring the shaft and guide into line.

(25) B. & C. say: 1. We are building a boat about 60 feet long and 20 feetwide, with a flat bottom and a light top, to be used as a trading boat on a small river. What engine power will be necessary? A, The boat is of a very bad model, and will probably require ar engine of from 15 to 20 horse power. 2. Can the motion of a vertical engine be reversed ? A. A vertical engine can be reversed by being fitted with a link, or with two eccentrics and hooks. 3. Can a propeller be used on

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into the molds.

(4) M. H. K. asks: What are the cheapest and best chemicals known, to be mixed together To what degree for use as a freezing mixture? Fah. will they descend, and what are the proper proportions to mix and use? A. One of the best, and one of the most economical, is the solution of sulphate of soda in commercial hydrochloric acid. Pour 5 parts of the acid upon 8 parts of the salt reduced to powder; the temperature may thus be reduced from 50° to 0°.

(5) G. E. K. Jr. asks: How can I remove oil stains from marble? A. First rub with benzine or turpentine, and then cover with powdered chalk or pipe clay and keep in a warm place for some time.

(6) E. M. D. asks: What kind of clay should use to make crucibles? A. You do not state for what purpose you intend to use your crucibles. We cannot give definite directions unless we know. In order to render crucibles capable of withstand ing great variation of temperature, several substances are used: sand, flint, fragments of old crucibles, black lead, and coke are used for this purpese. The most refractory crucibles are those

(17) C. C. asks: In your issue of April 17, in answer to the following question: "At 1875 what power would you rate an engine that is 8 inches bore and 15 inches stroke, running at a speed of 20 revolutions with 80 lbs. steam" say: At about 12 horse power. By what formula do you calculate this? Do you mean that thereal effective power of an engine under these conditions is 12 horse power? According to Roper's formula, as well as Haswell's, I should figure it at 36 horse power, with (say) 10 per cent off for friction, making about 32 horse power. A. We do not consider that either of these rules gives very correct

results. Our answer was based on a personal knowledge of the actual performance of such eng nes. The answer referred to effective hore power. It is quite true that the rules you menthe conditions of actual practice; but in general they do not.

give 30 lbs. pressure on the square inch on a safety ¹ tion.

a flat-bottomed boat to sdvantage? A. If you build such a boat, it would be better to propel it with a stem wheel.

(26) R. B. W. asks: Would a 12 horse power engine be sufficient to run a 65 saw cotton gin and a 30 inch grist mill? A. Not if they were driven up to their full capacity.

(27) D. S. S. says: I have a steel spring, 4 feet long, 1½ inches wide, and ½ inch thick, which was bent to its utmost for a period of 1 week, at the rate of 100 times a day. I find that it now retains a bend which weakens it. Is it impossible to make one that will always retain its natural straight position when left alone? A. All springs, however good, take a set in time.

(28) J. B. K. says: I claim that a balance wheel on an engine does not give additional power to the engine, but only regulates it and gives a steady motion. My opponent claims that the balion will give you true results, if they represent ance wheel gives the engine additional power. Who wins? A. You do. Your opponent appears to assert that the fly wheel has more power than (18) J. W. asks: How many inches from the machine which moves it. If this were the case,

the fulcrum must a ball of 1216 lbs. weight hang to it would be a very desirable kind of perpetual mo-

(29) R. H. McI. asks: What is the best cement or packing to use under a soft patch on boiler or in a steam joint? A. Red and white lead, to which fine iron filings may be added.

In a low pressure boiler, with mercury gag showing 15 lbs., is the actual pressure upon the piston 15 lbs. to the square inch or 15 lb₃++14% (the atmosphere) which (with the vacuum) is about 45 lbs. per square inch actual working pressure? A. The actual effective pressure is the total pressure above a vacuum on one side of the piston, diminished by the total pressure above a vacuum on the other side.

(30) B. B. B. asks: Will two hydraulic rams, with the same fall, with separate feed pipes, playing into the same landing pipe, work? If so will they force up more water than one ram with the same fall? A. They would work satisfactorily, and, under favorable conditions, the two would deliver about twice as much water as one.

(31) F. A. C. says: 1. I have an upright boller, 30 inches high above firebox, 15 inches in diameter, with shell and heads of wrought iron % inch thick, with 40 flues each 34 inch in diameter. How great a pressure will it safely stand? A. If well made. you can carry from 150 to 175 lbs. of stram. 2. Of what power ought an engine for this boiler to be? A. From 1 to 11/4 effective horse power.

(32) J. N. C. asks: What is your opinion about the use of compressed air for street car locomotion in lieu of steam (or horse) power? What is to prevent the compressing of air into suitable receivers, attached to each car and made to contain air to last long enough for one trip? A.There are numerous difficulties in the way; but they may be overcome, as many inventors are turning their attention to the subject.

(33) R. A. K. asks: Of what dimensions should a boiler, engine, and propeller be, to draw a yawl 22 feet long and 5 feet beam, drawing 20 inches, at a speed of 6 miles an hour? A. Engine, 3x5 propeller, 2 feet in diameter and 8 feet pitch; boiler, 2 to 21/2 feet in diameter, and 3 or 4 feet high.

(34) C. R. H asks: If I take a boiler, fill it full of water, and seal it up so as to have it properly airtight, and place a fire under the same, what will cause the bolier to burst? Will it be the expansion of the water, or the steam? A. As water expands rapidly by heat, it is probable that the boiler would be torn open long before the boiling point of water was reached.

(35) W. S. B. says: We have a machine called a cool air slasher, situated in a small room in the attic of our mill. The room is so small that, when the atmosphere outside is damp and heavy, we cannot dry our yarn. The air in the room is so moist that the beams and plaster overhead become wet. A ventilator on the roof, with a fan inside. is a benefit; but as moist air remains low and does not rise, I am thinking of putting a fan to one of the windows at the end of the room, the windows coming down to the floor. I will box in the window on bottom, put in a suction fan, and open the window at the bottom opposite the fan, more or icss. Am I right? A. Your general idea is right : for if you cannot get a natural draft, you must create one, either by a heated flue or a revolving fan. It is probable that you might get over the trouble by the use of a well devised flue.

(36) J. B. S. asks: How is it that the wheels of a car arestationary on the axle while the wheels (of the same size) are going round a curve, the outside track of which is of course longer than the inside? A. One of the wheels slips in such a

(37) A. F. & Co. say: We have been thinking of using our exhaust steam by turning it into a tank containing cold spring water, thereby heating our supply water and saving fuel. We have een advised by experienced men not do so, as they say we should burn out our boiler in a short time; they claim that the grease contained in the exhaust steam would form into globules, which would sink to the bottom of the boiler and prevent the water from touching the plates, thereby burning them out, and that they know this by ac tual experience with lake water in Chicago. With hard water or water containing much lime, it might be feasible; but with spring or soft water, it would be disastrous. Are these opinions sound? A. There would not be much danger unless you use a very large amount of grease in the cylinder. In nearly all ocean steamers the condensed steam is used for feed water. With a proper oil cup, the amount of lubricant used in the cylinder is very small, and is as effective as a much larger quantity admitted carelessly. It is not well to use tallow in such a case.

(38) F. S. L. asks: Are not the cubic con tents of a stick of timber, 12 inches square at one end and 18 inches square at the other, of a uniform taper, equal to one of the same length, 15 inches square throughout? And is not the answer No. 49, p. 251, vol. 32, incorrect? A. The answer is correct. The rule is as follows: Multiply together the area of the two bases, take the square root of the product, add the areas of the two bases; and multiply by 1/8 of the hight. If A=area of lower base, a=area of upper base, and h=altitude, then

power can be calculated; but that the effective walls being of stone 12 inches thick and two stories tances, A B=2'57", B C=4'70", C D=2'45". Focal horse power can only be found with precision by a test with the friction brake or dynamometer. Once more: Multiply together the area of the piston in square inches, the mean pressure throughout the stroke diminished by the mean back pressure in pounds per square inch, and the speed of the piston infect per minute, and divide the product by 33,000. If you can ascertain the pressure in lbs. per square inch required to overcome the friction of the engine-by subtracting this from the mean effective pressure, as determined by the indicator, and using the remainder for the effective pressure -you can calculate the useful horse power by the aid of the above rule.

(40) G. W. G. says: We have buried here (Galena, Ill.) one Lytton, whose friends claim that he was the original inventor of the paddle wheel, and the first to put it in practice. Is this so? A No. The paddle wheel was used by the ancient Egyptians, and later by the Romans.

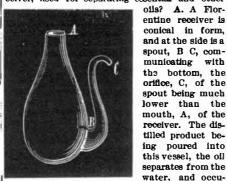
(41) L. K. Y. asks: Please give me a recipe make a varnish to put on the outside of a silver plated cup, that I am going to gold plateon the in-side; it must be thin and easily taken off. The object is to prevent the outside from being gold plated. A. Coat it with wax.

(42) G. M. H. asks: 1 Can a strong electric current be sent through successive coils of fine platinum wire for gas-lighting purposes? A. No. Can the current be divided at each platinum coll by some simple means, so that a part only may ss through the coil? A. Yes, by shunting the coil.

(43) B. R. H. says: 1 I have a mirror for a re flecting telescope, 14 inches in diameter, with a focal length of 12 feet 2 inches. I wish to construct a telescope on the Cassegrainlan plan. 1. What ought the diameter of the small mirror to be? A. Two inches. 2. What focal length should it have? A. Sixteen inches. 3. What should be the size of the hole in the large mirror? A. Two inches. 4. How can I test the accuracy of the curvature of the mirrors? A. By trial on a drop of mercury in the sun. 5. Is there any other method than Draper's of silvering the surface of the mirrors? A English method of silvering glass: Solution A: Nitrate of silver crystals 90 grains, distilled water 4 ozs. Solution B : Potassa, pure, by alcohol, 1 oz., distilled water 25 ozs. Solution C: Powdered mile sugar 1/2 oz., distilled water 5 ozs. A and B will keep in stoppered bottles; C must be made fresh and filtered. To silver an 8 inch glass speculum Pour 2 ounces of solution, A, into a glass vessel capable of holding 35 fluid ozs. Add drop by drop, stirring with glass rod, as much ammonia as is just necessary to obtain a clear solution of the gray precipitate first thrown down. Add4 ozs. of solution B. The brown-black precipitate formed must be just redissolved by the addition of more ammonia as before. Add distilled water untli the bulk reaches 15 ozs., and add drop by drop some of solution, A, until a gray precipitate, which does not re-dissolve after stirring three minutes, is ob tained: then add 15 ozs. more distilled water. Set aside to settle without filtering. Finally add 2 ozs. of solution C; stir gently and thoroughly in a round disk 3 inches deep and 2 inches larger than the speculum. Suspend the speculum face down ward in the liquid, which should rise 1/4 inch up the side. The mirror is attached to a wooden block by pitch at the back after wetting the back with turpentine.

(41) J. H. asks: Could a galvanic battery be made of sufficient current to stun birds, so as to catch them if they were to alight upon the wire A. No

(45) S. H. asks: What is a Florentine receiver, used for separating essential and other



means of a pipette.

high, and the ice packed in the upper story, and the lower one used for a sort of refrigerator, would the temperature be sufficiently low to preserve fresh meat and other perishable articles? A. We do not think that this arrangement would be satisfactory. (49) R. D. asks: 1. What distance apart should the lenses for a celestial eyepiece be placed,

their diameters and focal lengths being as follows? 1. 1/2 inch focus, 3/3 diameter, plane. 2. 11/4 inches focus, $\frac{11}{16}$ diameter, plane. A. Lenses $\frac{3}{4}$ inches apart. 2. Where should the diaphragm be placed, and of what size should the aperture be? A. Diaphragm aperture %", distant ½ inch from eye lens at its inside focus. 3. What distance apart should the lenses for a terrestrial eyepiece be placed, their focal length and diameters being (1) 2 inches focus, 13 diameter, plane; (2) 21/4 inches focus, 11 dlameter, double ; (3) 21/2 inches focus, 11/4 diameter, plane; (4) 1_{2} inches focus, $\frac{9}{16}$ diameter, plane? A. A or front lens to B=2.8'', B to C=3.5'', C to D=2.7''4.Where should the diaphragm be placed, and what the size of the aperture? A. Diaphragm aperture %", 1.5" in front of D, also diaphragm aperture 0.23", distant 1.64" from A. 5. What will be the power of these eyepieces with a 3 inch achromatic of 48 inches focal length? A. Equivalent focus 1.75", power 27.

(50) J. D. W. says: I would like to know why the pile of my Léclanché battery bothers me as it does. The top of the pile swells up, and some kind of whitish stuff comes out. It smells some what like bartshorn, and after it appears the battery gets weaker. What is the cause of it? A. Probably it is owing to defective manufacture. The genuine Léclanché battery is cemented at the top with gutta percha, but an article has been made in this country in which paper is made to take the place of gutta percha. Now the paper absorbs the moisture from the solution and draws it out of the cell by capillary attraction, and hence the appearance of the whitish deposit. The smell of hartshorn is due to the action of the battery, ammonia being set free at the negative electrode.

(51) R.O. T. says: 1. I wish to make an induction coil, about 10 or 12 inches long, with a center bundle of iron wires of about 34 inch diameter. The inducing coil consists of No. 18 wire, and the secondary coil, of No. 28, both American gage. The primary coil is to be about 35 yards long, and what I want to know is how much of the secondary wire ought I to wind on the primary to get a spark at least 1/2 inch long? A. It would be better to use finer wire for the secondary coil, say No. 36 wire. Your secondary coil should be at least thirty times as long as the primary. 2. How must I make the condenser? A. Condensers are made of alternate layers of tin foll and paper saturated with paratiin, arranged like the leaves of an interleaved book, the metal plates being the printed leaves and the paraffined paper the blank paper. Each alternate metal plate is con-nected so as to form two distinct series, insulated from each other, one of which is to be connected with each end of the primary coli. The spark of an induction coil cannot take the place of a battery for general purposes. 3. I tried to make a condenser of sheets of tin foil, glued on each side of a large sheet of common newspaper; and after doubling it up so that the two sides did not touch each other, I connected each sheet with each er d of the inducing coil. Will this do? A. You cannot make a condenser by rolling the sheets up separately as proposed. 4. Why cannot I use the induced current of a small coil for the inducing one of a larger? A. The reason why you cannot use the induced current of a small coil for the inducing one of a larger is that the induced current is one of tension, whereas quantity is required. The effects produced by the secondary coil result from the transference of electric quantity in the primary to electric tension in the secondary.

(52) J. J. J. asks: 1. If I make a square copper box 8x6 inches deep, and suspend therein a square of zinc, I will have a sulphate of copper battery. How many such cells will I require to plate with nickel and silver? A. Two. 2. How many such will be required to make the electric light? A. 100. 3. If I make a silver solution by dissolving two silver dollars in acid, and put this solution into three quarts of water, contained in a one gallon stone jar, can I, by suspending the articles to be plated in this solution and connecting them to the negative pole of a battery, plate them? A. Use 100 parts of water, 10 parts cyanide of potassium, 1 part cyanide of silver.

(53) C. asks: Is there such a preparation sa chemical ink, tecoming invisible or fading after writing, to reappear on exposure to heat? A.Use dilute solution of chloride of cobalt.

point, 0.713" in front of A. Aperture of A=0.7", B=0.7", C=1.15", D=0.7'. Diaphragm aperture, 02", distant 1.29" from A. Diaphragm aperture, 0.75, at inside focus of eye lens. Cap, 0.28, aper-ture distant 0.44 from D. Length of eyepiece=10 inches. Field of view=30 minutes. Power=57 A and B plane side to objective, C and D plane side to eye.

(57) W. R. B. says: 1. In Dick's "Practical Astronomer" is a description of Rogers' plan of an achromatic telescope consisting of a small correcting lens of flint and crown glass to correct a large object glass of crown. I do not understand the formula for computing or constructing such a long. I have a good double convex lens of crown glass, 5 inches in diameter and of 97 inches focus. Will you please give me the diameter and focus of both the convex crown and concave flint composing the correcting lens, for such an object glass? A. Professor H. L. Smith gives the following formula for a 6 inch dialyte telescope of 834 feet focus; Crown objective, outelde radius, 76-396 inches, Inside radius, 175-109". Corrector composed of a plano-convex crown, radius 8.9915", and a double concave fint lens, radii 161-14" and 9973". Flat sides of the corrector together, and crown next to object glass. 2. What is the distance at which it should be placed from the object glass? Is there any great difficulty in obtaining a satisfactory effect in this manner? A. The corrector, 4 inches diameter, is placed about half the focus of crown objective from it, and moved until it corrects the chromatic aberration; and then the lenses of the corrector are separated more or less by 3 bits of card, about $3\frac{1}{32}$ inch, more or less, until the spherical aberration is corrected. The correction is now perfect at center of field only; and the field lens of the Huyghenian eyepiece must be put in a sliding tube and slid out un til the correction is complete throughout the field, except a slight aberration at the margin. 3. I desire to attempt the construction of an achromatic object glass for a telescope. Will you please give me the radius of the different curves of the crown and flint for an object glass 4 inches diameter, 60 inches focus? A. Tables for the curves of any pair of disks, given the index of refraction and dispersive power of the flint and crown, to the fourth place of decimals are to be found in Prechtl's "Praktische Dioptrik," being Barlow's ex-tension of Herschel's tables. 4. Where can I obtain the flint and crown glass disks for the above? A.At Heroy & Marenner's (Chance's agents), Duane street, New York city. 5. Is there any work pub-lished which would aid an amateur in the making, (grinding, polishing, and testing) of lenses? A. Get Draper's book, and also Prechtl, to read with the help of some intelligent Teuton. You will then be on the road to success.

(58) H. W. W. says: In your most interesting article in No. 10, on solar chemistry, you say that the gaseous substances which constitute the photosphere contain lime, magnesia, and iron. Are we to infer that our sunshine contains these? Whatis the proof? A. The sunshine does not contain lime, magnesium, etc. Its spectrum, however, contains certain dark bands which, when compared with the spectra of the metals in the state of incandescent vapor, correspond with the bright spectral lines formed by these incandescent vapors. But it is a property of incandescent vapors to absorb light of the same refrangibility as they emit. Hence the dark bands in the solar spectrum are absorption bands, due to the absorption of certain portions of the sunlight by corresponding incandescent vapors.

(59) C. A. says, in reply to E. G., who asks vhat speed to give a foot power circular saw: I run mine at 4,500 revolutions per minute. My saws are five inch, of No. 26 gage. The balance wheel is about 75 lbs. in weight, and I increase motion with countershaft. I enclose sample of cuts made with a cut-off saw. Are they good work for a foot power saw? A. Yes, very good indeed. and give evidence that the sawyer is an expert. E G. and others will be much obliged for the information.

(60) R. H. H. says, in reply to J. S., "who asks if a belt would hug a smooth iron pulley sloser than one covered with leather, and you say that you are not sure that a pulley covered with leather is better than one with a smooth iron face: I know it is better, for we put on a 10 inch iron pulley with a 4 inch face, and the belt would slip, no matter how tight it was. We changed it to a 10 inch wood pulley with 4 inch face covered with leather, and it does the work now without any slipping.'

(61) G. B. says, in reply to A. B., who asks What is the material used in the manufacture of abric s vhich g roy, an odor when wet? Anima! size, made chiefly of dead horses, put in to give the fabric more body.

solidity = $\frac{(A+a+\sqrt{Aa})\times h}{(A+a+\sqrt{Aa})\times h}$. Applying the rule to 8

2.25+1+V 2.25 × 1 ×20 the given example, solidity= 3 =31.6+.

(39) A. W. asks: What horse power are we using with an engine, diameter of cylinder being 15¼ inches, stroke 32 iaches, revolutions 73 per minute, average pressure throughout stroke being 48⁻¹ lbs.? A. Do you and many others who continually write to inquire the horse power of engines ever read our replies on the subject? We have published the rule in a dozendifferent forms, and have explained that, with the mean pressure as ascertained by the indicator, the indicated horse

46) W P I Hartford Boiler Insurance Company, it is stated that common soda is as good an absorbent as anything. Does this mean sal soda, or carbonate of soda, or some other kind? A. Common washing soda.

pics the upper part of the vessel. The water, as it

rises above the bend of the spout, flows off at C,

while the oil may be from time to time removed by

(47) A. L. asks: Will a blowpipe drill a hole in the best safes manufactured? A. No. (48) C. F R. asks: Can you give me a re cipe for mixing dry pigment, as water colors, for painting on paper? A. Mix the pigment with water to a thin paste. Add pure gum arabic (heavy) sufficient, when dry, to make a soft dry cake, which may be used as a body color.

What can I put on drawing paper to make it transparent and still retain its smoothness and toughness? A. See p. 208, vol. 32.

What is the heaviest metal? A. Platinum is (with the exception of indium and osmlum, which are equally dense) the heavlest form of matter yet

I often hear people say it is too cold to snow: is it ever too cold to snow? A. Yes. An extremely cold, dry air is one from which the moisture in great part must have previously precipitated. If an ice house be built on the side of a hill, the

(54) R. W. W. asks: 1. What causes the liquid, commonly called smoke water, to form in stove pipes? A. A certain amount of water as well as smoke is formed in the combustion of fuels. As long as the temperature of the flue is kept high enough, this water is carried off in the form of vapor; but if the temperature is lowered, it is condensed and acquires an acid reaction from the sulphurous, sulphuric, and carbonic acids renersted in the burning of the fuel. 2. What will effectually prevent the dripping nuisance? A. See that your flue is not chilled, has a good draft, and is free from elbows, etc., where vapors may be condensed and collected.

(55) B. H. A. says: I wish to procure a vat for boiling a solution of 1 part supplyric acid and 11 parts water; I want it to hold about 60 or 70 gallons. Of what material should it be made, in order not to corrode? A. Porcelain lined iron Pots have been used with advantage for this pur-

(56) H. L. asks: What is the formula for a terrestrial ocular with plano-convex lenses, for an objective or speculum of 48 inches focus? A. | Foci: A=1.58"; B=2.38", C=2.65", D=1.50". Dis- chase these river pearls. We have had a pearlfrom

(62) F. V. J. says, as to the needed improveents in the rall joints on street railroads: A piece of rubber put under the plate would prevent the evil to some degree. As the rails are now, they lamage the cars; but rubber put under the rails would act as a spring and deaden the jar.

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

J. H. N. D.-The brilliant golden scales are films of muscovite, a variety of mica, which have acquired their color by the oxidation of a small percentage of iron which the mineral contains under the influence of heat in a current of air.-J. U. E. -You are mistaken in supposing that the sun's heat is attributed by scientists to combustion. A great many suns made up of coal would have been entirely consumed during the time the sun has been the source of heat to the solar system .-M. H.-It is sulphuret of lead or galena.-M. R. K. -We regret to say that the jewelers will not pur-

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J J 2					
he Wabash river many times the size of the larg-	Clock, R. H. Strong Cloth winding and measuring, J. Wayland				
st specimen, but it is not saleable.	Coal scuttle, Feldmeier & Stoeppelwerth	162,367	Planter, corn, C. Hutchins	162,173	2,386MEDICINEW. M. Clarke & Co., Boston, 2,387SHIRTSE. Jennings & Co., Chicago, Ill.
B. M. asks: Which is the best way to bottle	Corks, machine for tapering, Z. M. Lane	162,241	Planters, seed, G. W. Brown (r)	. 6 394, 6.335	2,388WATCH MOVEMENTSL. & M. Kahn, N. Y 2,389LARDA. & J. M. Moses, New York city.
ager beer to avoid a second fermentation?—R. H. J. asks: If a heavy sphere, whose diameter is 4	Corn sheller, W. Stover Cotton gin feeder, F. W. Flynn	162,371	Plow, C. L. Carter	162,151	2,390LARDG. C. Napheys & Son, Philadelphi
nches, be dropped into a conical glass full of wa-	Cotton seed drill, H. Steckler, Jr Crucible mold, J. C. Wallace	162,322	Plow, J. Lane Plow attachment, E. N. Yardly	162,240	2,391.—PETROLEUM.—Power & Co., London, Eng., 2,392 —MEDICINE.—J. H. Ruttley, San Francisco,
er, whose diameter 15 5 inches and altitude 6 inch- s, how much water will run over ?	Cultivator, A. B. Colver Curry comb, A. F. Migeon	162,273	Plow, gang, L. O. Rockwood Pocket fastener. D. Neustadter	162,254	2,393JAMS, ETCP. J. Ritter, Philadelphia, Pa. 2,394 to 2,397TOBACCOJ. Sarrazin, New Orlean
COMMUNICATIONS RECEIVED.	Dental bib, R. Horton Dental mallet, J. f. Codman	162,170	Pot, coffee, J. Boyers	162,317	2,398 -STOVES Summer King Co., Pittsburgh, Pa
The Editor of the SCIENTIFIC AMERICAN ac-	Door check, G. Burt	162.217	Pots, spout for sheet metal, P. Lesson Press, cider, D. C. Starks	162,257	2,399 COPYABLEINKS F. de B. Bertot, New Yor 2,400 StLKS A. De Greiff & Co., New York city
nowledges, with much pleasure, the receipt of or- rinal papers and contributions upon the following	Door knob, C. Rebstock Dough mixer, F. G. Morrison	162,418	Press, lard and cheese, A. J. Noe	162,407	2,401COFFEES, ETCFocht & Co., Philadelphi 2,402SPIRITSFreiberg et al., Cincinnati, Ohio
ubjects:	Drill for drilling metal, Shaw & Lucas Drill, rock, G. H. Reynolds	162,315	Presses, oil and other, A. Shedlock Press, hydraulic pump, D. C. Starks	162,198	2,403.—STARCH.—Glen Cove Starch Co., New York 2,404.—CORN FLOUR.—Glen Cove Starch Co., N. Y
On the Tides. By W. H. P., and by Z. On Poetry and the Locomotive. By J. H. B.	Drill, tripod rock, Nutting & Githens	162.302	Printing press feed gage, J. Turner	162,207	2,405RASPS ANL FILKSHeller et al., Newark,
On the Vital Principle of Organic Matter. By	Elevator, hay, J. Jones Elevator, hay end grain. T. Powell	162,307	Propeller, steering, W. H. Mallory Pump, R. A. McCauley	162,181	2,406SOAPLincoln M'r'g Co., Providence, R. 1 2,407GLOVES, ETCPassavant & Co., New York
V. H. B. On Lighting Tapers. By F. W. D.	Elevator, hydraulic, C. W. Baldwin Elevators safety catch for, F. B. Perkins		Pump, McCoy and Harper Pump. air, G. E. Barker		2,408.—ToysR. Jenkins, Brooklyn, N. Y. 2,409.—CorsetsS. Kleinberger, New York city.
On a Parasite of the House Fly. By D. V. D.	Embossing (r printing stau p, J. A. Smart Engine governor, steam, G. L. McCahan		Pump for hydraulic presses, D. C. Starks.	162,256	2,410. FishEagle Fish Co., New York city.
On Boiler Explosions. Py S. N. B. so enquiries and answers from the following.	Engine governor, steam, J. D. Willoughby	162,446	Pump, steam, J. North Pump, steam, W. Wright (r)		SCHEDULE OF PATENT FEES. On each Caveat
MF. C. RH. CO. CH. S. RW. S. DP. B.	Engine lubricator, steam, J. Farnan Engine valve, steam, R. Schmidt	162,196	Punch. conductor's, H. Johnson Purifier, middlings, J. Brown		On each Trade mark On fling each application for a Patent (17 years)
H. IIC. C. MM. W. HJ. M. EH. J. D J. PJ. C. RA. P. EE. W. PSA. W. P			Purifier, middlings, Crittenden aud Water Purifier, middlings, R. L. Downton	s 162,276	On issuing each original Patent
C. H. AJ. MF. II. WS. TR.GJ. R.DA. L. F. MJ. F. JJ. BR. A. K.	Fan, automatic, L. D. Stamps Fare box, R. M. Robinson	162,320	Railway, elevated, J. B. Chuich	162,220	On appeal to Examiners-in-Chief On appeal to Commissioner of Paters
	Fastener, metallic, G. W. McG ll	162,184	Railway signal, H. Flad Railway signal, J. Gordon	162,376	On application for Reissue On thing a Disclaimer
HINTS TO CORRESPONDENTS.	Faucet, J. G. Bickel (r) Fence, farm, T. W. Owens	162,411	Railway switch, E. A. Trapp Rain water cut-off, J. F. Hess		On an application for Design (3½ years)
Correspondents whose inquiries fail to appear nould repeat them. If not then published, they	Filter rack, M. Leiner Firc arm, breech-loading, F. W. Freund		Rain water cut-off, automatic, T. C. Fawo	cett 162,366	On application for Design (7 years) On application for Design (1-1 years)
ay conclude that, for good reasons, the Editor de-		162,162	Rake, vine, J. W. Dunn Ring or fastener, suspending, G. W. McGi	ili 1 6 2,185	CANADIAN PATENTS.
ines them. The address of the writer should al ays be given.	Fire arm, guard lever, etc., F. W. Freund	162,374	Roll for rounding rods, T. S. Cook		LIST OF PATENTS GRANTED IN CAN.
Enquiries relating to patents, or to the patenta-	Fire arm grip, F. W. Freund Fire escape, E. Matteson.		Saw mill, circular, C. M. Fairbanks	162,279	APRIL 16 to 21, 1875.
lity of inventions, assignments, etc., will not be ablished here. All such questions, when initials	Fire extinguisher, J. T. Hall	162,252	Saw sharpening machine, J. L. Knowlton Saw teeth, insertible, E. Smith	162,319	4,636Wm. T. Root et al., Ingersoll, Ont. Radiate
nly are given, are thrown into the waste basket, as	Flour, making middlings, R. L. Downton	162,157	Separator, grain, E. Knapp Sewer inlet trap, J. McGuire	162,403	steam heating apparatus. April 16, 1875.
would fill half of our paper to print them all; it we generally take pleasure in answering briefly	Fuel, artificial, J. J. Endres	162,362	Sewing machine, J. L. Follett	162,372	4,637J. L. Adams, Montreal, P. Q. Tobacco of April 16, 1875.
y mail, if the writer's address is given. Hundreds of enquiries analogous to the following	Furnace doors. J. Ashcroft162,3	233, 162,834	Sewing machine winder, Rhoades et al	163,193	4,633J. D. Stark, Brooklyn, N. Y., U. S. H wheel lubricator. April 16, 1875.
e sent : "Who makes the best steam trap? Who	Furnace, hot air, G. E. Wallis	162,436	Sewing machine power, J. K. Welter Sewing straw braid, W. F. Sprague	162,426	4,639A. H. Swain, Winchester, Ind., U. S. Adju
ells the best three horse engine? Who makes ne latest improved steam cut-off? Who sells the	Game board, G. Bayles	162,141	Shawl strap handle, H. Edwards Shoe, L. Heath	162,860	table and ironing board. April 16, 1875. 4,640R. F. Cooke, New York city U. S. Elastic
est sewing machine motor? Whose is the best tool	Gas retort, S. S. Putnam Gas stove, Burnham & Taite	162,150	Shot boxes, cut off for, H. C. Wey	162,326	shoe. April 16, 1875. 4,641J. E. Wisner, Friendship, N. Y., U. S.
eel ?" All such personal inquiries are printed, as ill be observed, in the column of "Business and	Gale, automatic, C. E. Ginespie		Shot charges, G. A. Capewell Shovel, C. H. Sayre	162,312	hay rake. April 16, 1875. 4,642M. D. Murray et al., Johnstown, N. Y.,
ersonal." which is specially set apart for that pur- ose, subject to the charge mentioned at the head	Gate, farm, J. N. Wilson	162,448	Shovel blanks, casting, Binns and Carnes. Shovels, manufacture of, T. J. Elake		Breast collars for harness. April 16, 1555.
that column. Almost any desired information	Glass stands, pressed, Hobbs & Brockunier	162,234	Sight protector, M. H. Mendenhall	162,298	4,643.—A. L. Carey <i>et al.</i> , Ypsilanti. Mich., U. S. pump bucket. April 17, 1875.
an in this way be expeditiously obtained.	Glass mold, Hobbs & Brockunier Glassware, A. A. Adams		Sign, F. Billingham Sign frame, open, E. F. Southward		4,644Wm. H. Gibbs, Oshawa.Ont. Middlings pu April 17, 1975.
	Glassware, C. W. Bruckunier Governor, D. L. F. Chase	162,216		162,174	4,645R. W. Jeffery, Woedbridge, Ont. Bolt lo pitman box. April 17 1875.
[OFFICIAL.]		162 219			puman oox. April 1 15(5,
[OFFICIAL.]	Grain scourer, M. D. Beardslee	162,213	Soda water generator. J. Anderson		
[OFFICIAL.] NDEX OF INVENTIONS	Grain scourer, M. D. Beardslee	162,213 162,295		162,246	4,646.—J.Currie, Toronto, Ont. Boiler foam prev and fuel saver. April 17, 1875. 4,647.—J. F. Webster, Hamilton, Ont. Screw mad
NDEX OF INVENTIONS	Grain scourer, M. D. Beardslee Harrow, J. McPherson Harrow, G. H. Pounder Harrow, C. W. Strombeck Harveer, J. H. Elward (r)	162,213 162,295 162,306 162,205	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter	162,246 6,386 162,416	and fuel saver. April 17, 1875. 4,647.—J. F. Webster, Hamilton, Ont. Screw may April 17, 1875.
NDEX OF INVENTIONS FOR WHICE Actters Patent of the United States were	Grain scourer, M. D. Beardsiee Harrow, J. McPherson Harrow, G. H. Pounder Harrow, C. W. Strombeck Harvester, J. H Elward (r) Harvester, bean. Barber & Amis	162,213 162,295 162,306 162,205 162,205 6,395 162,189	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento	162,246 6,386 162,416 16 ² , 68 on 16 ² ,413	and fuel saver. April 17, 1875. 4,647.—J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648.—L. W. Russell, Gananogue, Ont. Fence c April 17, 1875.
NDEX OF INVENTIONS FOR WHICE Actters Patent of the United States were Granted in the Week ending	Grain scourer, M. D. Beardslee Harrow, J. McPherson Harrow, G. H. Founder Harrow, C. W. Strombeck Harvester, J. H. Elward (r) Harvester, bean. Barber & Amis Harvester rake, J. II. Myers Rarvester reel, F. Wyman	162,213 162,295 162,306 162,205 6,395 162,189 162,445 162,329	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite	162,246 	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875.
NDEX OF INVENTIONS FOR WHICH Actters Patent of the United States were Granted in the Week ending April 20, 1875,	Grain scourer, M. D. Beardslee Harrow, J. McPherson Harrow, G. H. Pounder Harrow, C. W. Strombeck Harvester, J. H Elward (r) Harvester, bean. Barber & Amis Harvester reel, F. Myers Harvester reitman holder, C. Wheeler, Jr	162,213 162,295 162,306 162,205 6,395 162,139 162,405 162,329 162,328	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyge (r)		and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carburetter combined. April 17, 1875. 4,650S. R. Bailey, Boston, Mass., U. S. Wood
NDEX OF INVENTIONS FOR WHICE Actters Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE.	Grain scourer, M. D. Bcardslee Harrow, J. McPherson Harrow, G. H. Pounder Harrow, C. W. Strombeck Harvester, J. H. Elward (r) Harvester, bean. Barber & Amis Harvester rake, J. I. Myers Rarvester rel, F. Wyman Harvester pitman holder, C. Wheeler, Jr Hat brushing machine, A. S. Joyce Hatchways, safety guard for, E. Schlenker	$\begin{array}{c} 162,213\\ 162,295\\ 162,306\\ 162,205\\ 6,395\\ 162,405\\ 162,405\\ 162,405\\ 162,329\\ 162,328\\ 162,328\\ 162,329\\ 162,390\\ 162,195\\ \end{array}$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r)		and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence of April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c
NDEX OF INVENTIONS FOR WHICH Actters Patent of the United States were Granted in the Week ending April 20, 1875,	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,306\\ 162,206\\ 6,395\\ 162,189\\ 162,405\\ 162,329\\ 162,329\\ 162,328\\ 162,328\\ 162,390\\ 162,195\\ 162,195\\ 162,221\\ 6,338\\ \end{array}$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r) Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove pipe shelf, R. D. Farr	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 162,416 \\ & 162,468 \\ & 162,413 \\ & 162,413 \\ & 162,130 \\ & 162,341 \\ & 162,344 \\ & 162,344 \\ & 162,345 \\ & 6,390 \\ & 162,243,162,244 \\ \end{array}$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,649L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c April 17, 1875. 4,652S. H. Hall, Belle Flaine, Iowa, U. S. Ta
NDEX OF INVENTIONS FOR WHICH etters Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,103\\ 162,103\\ 162,139\\ 162,439\\ 162,329\\ 162,329\\ 162,328\\ 162,329\\ 162,328\\ 162,39\\ 162,211\\ 6,338\\ 162,211\\ 6,38\\ 162,311\\ 162,251\\ \end{array}$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove, cooking, J. Pento Stove, cooking, J. P. Hyde (r) Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthicssen 162,242, Table, L. Postawka	$\begin{array}{c}$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood- ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge cn April 17, 1875. 4,653J. R. Hall, Belle Flaine, Iowa, U. S. Tau April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma
NDEX OF INVENTIONS FOR WHICH Actions Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,105\\ 162,405\\ 162,405\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,320\\ 162,211\\ 6,338\\ 162,311\\ 162,251\\ 162,280\\ \end{array}$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. P. Hyde (r) Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r). Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthicssen 162,242, 1	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 162,416 \\ & 162,418 \\ & 162,413 \\ & 162,413 \\ & 162,130 \\ & 162,130 \\ & 162,344 \\ & 162,363 \\ & 6,390 \\ & 162,243 \\ & 162,244 \\ & 162,243 \\ & 162,213 \\ & 162,301 \\ & 162,439 \end{array}$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Bailey, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c: April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875.
NDEX OF INVENTIONS FOR WHICE etters Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,329\\ 162,328\\ 162,328\\ 162,328\\ 162,393\\ 162,221\\ 6,338\\ 162,211\\ 162,251\\ 162,251\\ 162,280\\ 162,381$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, L. Postawka Table, folding, J. Bradfietd Tanning hides, Bartenbach and Richter	$\begin{array}{c}$	 and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood- ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge en April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Tau April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,653E. Tiffany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875.
NDEX OF INVENTIONS FOR WHICH setters Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,405\\ 162,405\\ 162,405\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,320\\ 162,320\\ 162,211\\ 6,338\\ 162,251\\ 162,251\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,370\\ 162,370\\ 162,397\\ \end{array}$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthicssen 162,242, i Table, L. Postawka Table, magle and ironing, F. Way Table, folding, J. Bradfield Tanning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 162,416 \\ & 162,416 \\ & 162,413 \\ & & 162,413 \\ & & & 162,413 \\ & & & & & & & & & & & & & & & & & & $	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Bailey, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c: April 20, 1875. 4,653J. B. Porter, Marmouth, N. S. Ironing ma April 20, 1875. 4,654E. Tiffany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875. 4,655A. G. Gray, St. John, N. B. Mowing ma April 21, 1875.
NDEX OF INVENTIONS FOR WHICH etters Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,105\\ 162,105\\ 162,105\\ 162,329\\ 162,329\\ 162,329\\ 162,328\\ 162,329\\ 162,328\\ 162,211\\ 162,211\\ 162,211\\ 162,251\\ 162,251\\ 162,251\\ 162,351\\ 162,370\\ 162,370\\ 162,370\\ 162,372\\ 162,382\\ \end{array}$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove, pipe shelf, R. D. Farr Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, Table, L. Postawka Table, mangle and ironing, F. Way Table, folding, J. Bradfietd Tanning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 162,416 \\ & 162,418 \\ & 162,418 \\ & 162,413 \\ & 162,150 \\ & 162,351 \\ & 162,351 \\ & 162,344 \\ & 162,365 \\ & 6,390 \\ & 162,343 \\ & 162,213,162,244 \\ & 162,213,162,243 \\ & 162,213,162,243 \\ & 162,213,162,214 \\ & 162,215 \\ & 162,212 \\ & 162,2$	 and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c: April 17, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 29, 1875. 4,655R. Rydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875.
NDEX OF INVENTIONS FOR WHICH Actions Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] [Arm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,405\\ 162,405\\ 162,405\\ 162,329\\ 162,328\\ 162,328\\ 162,328\\ 162,328\\ 162,328\\ 162,328\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,370\\ 162,370\\ 162,370\\ 162,372\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,387\\ 162,388\\ 162,358\\ 162,3$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthicssen 162,242, i Table, L. Postawka Table, dolding, J. Bradfietd Tanning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 62,416 \\ & 162,418 \\ & 162,418 \\ & 162,130 \\ & 162,130 \\ & 162,130 \\ & 162,344 \\ & 162,365 \\ & 6,390 \\ & 162,344 \\ & 162,345 \\ & 162,243 \\ & 162,243 \\ & 162,213 \\ & 162,213 \\ & 162,213 \\ & 162,213 \\ & 162,214 \\ & 162,213 \\ & 162,214 \\ & 162,214 \\ & 162,214 \\ & 162,214 \\ & 162,214 \\ & 162,212 \\ & 162,149 \\ & 162,202 \\ & 162,203 \\ & 162,353 \\ \end{array}$	 and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c April 17, 1875. 4,652S. H. Hall, Belle Flaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655S. Rydbeck, Red Wing, Min., U. S. Mo machine. April 20, 1875. 4,655I. I. Levy, Ellaville, Fla., U. S. Fence pick
NDEX OF INVENTIONS FOR WHICH Actions Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] Iarm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,329\\ 162,329\\ 162,328\\ 162,329\\ 162,328\\ 162,329\\ 162,211\\ 162,211\\ 162,211\\ 162,251\\ 162,280\\ 162,381\\ 162,381\\ 162,370\\ 162,370\\ 162,370\\ 162,432\\ 162,368\\ 162,159\\ 162,159\\ 162,432\\ 162,368\\ 162,159\\ 162,1$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, magazine, R. Blum. Stove pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Store sheeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, L. Postawka Table, folding, J. Bradfield Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 162,416 \\ & 162,418 \\ & 162,418 \\ & 162,413 \\ & 162,150 \\ & 162,351 \\ & 162,351 \\ & 162,345 \\ & 162,345 \\ & 162,345 \\ & 162,345 \\ & 162,243,162,243 \\ & 162,213,162,243 \\ & 162,213,162,243 \\ & 162,213,162,243 \\ & 162,213 \\ & 162,213,162,243 \\ & 162,214 \\ & 162,214 \\ & 162,149 \\ & 162,149 \\ & 162,149 \\ & 162,204 \\ & 162,202 \\ & 162,355 \\ & 162,355 \\ & 162,355 \\ \end{array}$	 and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. Stoper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood- ing machine. April 17, 1875. 4,650W. G. Rawbonc, Toronto, Ont. Cartridge en April 10, 1875. 4,653W. G. Rawbonc, Toronto, Ont. Cartridge en April 10, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,653E. Tilfany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655S. Rydbeck, Red Wing, Minn., U. S. Mo- inachine. April 20, 1875. 4,655I. Levy, Ellaville, Fla., U. S. Fence pick- chine. April 20, 1875. 4,655Win Peaker et al., Brampion, Ont. Hot air
NDEX OF INVENTIONS FOR WHICH Actions Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] Iarm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,395\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,215\\ 162,221\\ 6,338\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,432\\ 162,393\\ 162,432\\ 162,393\\ 162,432\\ 162,393\\ 162,432\\ 162,432\\ 162,432\\ 162,254\\ 162,282$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r). Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthicssen 162,242, i Table, L. Postawka Table, Colding, J. Bradfietd Taning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith. Tobacco package, J. D. Culp Toy pistol, A. E. Taylor Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck, creaser, H. C. Goodrich	$\begin{array}{c} & 162,246 \\ & 6,386 \\ & 162,416 \\ & 162,413 \\ & 162,130 \\ & 162,130 \\ & 162,130 \\ & 162,344 \\ & 162,365 \\ & 6,390 \\ & 162,344 \\ & 162,365 \\ & 6,390 \\ & 162,344 \\ & 162,213 \\ & 162,213 \\ & 162,213 \\ & 162,214 \\ & 162,213 \\ & 162,214 \\ & 162,213 \\ & 162,214 \\ & 162,213 \\ & 162,140 \\ & 162,212 \\ & 162,202 \\ & 162,353 \\ & 162,258 \\ & 162,219 \\ & 162,244 \\ & 162,219 \\ & 162,244 \\ & 162,219 \\ & 162,246 \\ & 162,246 \\ & 162,219 \\ & 162,246 \\ & 162,246 \\ & 162,246 \\ & 162,246 \\ & 162,219 \\ & 162,246 \\ & 162$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood- ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge cr April 20, 1875. 4,652S. H. Hall, Belle Flaine, Iowa, U. S. Tau April 20, 1875. 4,655A. G. Gray & Tarmouth, N. S. Ironing ma April 20, 1875. 4,655A. G. Gray & John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray & John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray & John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray & John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray & John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray & John, N. B. Mowing ma April 20, 1875. 4,655C. Hey, Ellaville, Fla., U. S. Fence pick- chine. April 20, 1875. 4,658Wm. Peaker et al., Drampton, Ont. Hot air stove. April 20, 1875. 4,659J. S. Komp, Magog, P. Q. Manure-spr
NDEX OF INVENTIONS FOR WHICH Action of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,221\\ 6,338\\ 162,231\\ 162,251\\ 162,251\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,377\\ 162,432\\ 162,388\\ 162,351\\ 162,377\\ 162,432\\ 162,388\\ 162,351\\ 162,377\\ 162,432\\ 162,388\\ 162,351\\ 162,370\\ 162,432\\ 162,289\\ 162,147\\ 162,269\\ 162,242\\ 162,259\\ 162,242\\ 162,259\\ 162,242\\ 162,259\\ 162,242\\ 162,259\\ 162,259\\ 162,242\\ 162,259\\ 162,259\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, pipe shelf, R. D. Farr Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Table, A. D. Bradfietd Table, dolding, J. Bradfietd Taping hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Luck, reaser, H. C. Goodrich	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ \ldots 162,468\\ n. 162,413\\ \ldots 162,150\\ 162,351\\ \ldots 162,150\\ 162,341\\ 162,355\\ \ldots 6,390\\ \ldots 162,345\\ 162,243\\ 162,245\\ \ldots 162,301\\ 162,433\\ 162,245\\ \ldots 162,439\\ 162,215\\ \ldots 162,149\\ \ldots 162,439\\ 162,215\\ \ldots 162,149\\ \ldots 162,149\\ \ldots 162,149\\ \ldots 162,258\\ \ldots 162,355\\ \ldots 162,258\\ \ldots $	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood- ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge cf April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Tau April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,654E. Tiffany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655S. Rydbeck, Red Wing, Minn., U. S. Mo- machine. April 20, 1875. 4,655I. Levy, Ellaville, Fla., U. S. Fence pick- chine. April 20, 1875. 4,658Wm. Peaker et al., Brampton, Ont. Hot air stove. April 20, 1875. 4,658J. S. Kemp, Magog, P. Q. Manure-spr machine. April 21, 1875.
NDEX OF INVENTIONS FOR WHICH Actions Patent of the United States were Granted in the Week ending April 20, 1875, AND BACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,295\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,395\\ 162,393\\ 162,432\\ 162,393\\ 162,432\\ 162,393\\ 162,432\\ 162,393\\ 162,432\\ 162,432\\ 162,253\\ 162,252\\ 162,253\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthiessen 162,212, 1 Table, L. Postawka Table, mangle and ironing, F. Way Table, folding, J. Bradfietd. Tanning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Valve, Landsell and Leng	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,413\\ 162,413\\ 162,130\\ 162,130\\ 162,341\\ 162,345\\ 162,344\\ 162,365\\ 6,390\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,215\\ 162,215\\ 162,215\\ 162,213\\ 162,421\\ 162,215\\ 162,215\\ 162,212\\ 162,213\\ 162,212\\ 162,213\\ 162,212\\ 162,213\\ 162,212\\ 162,213\\ 162,212\\ 162,213\\ 162,212\\ 162,213\\ 16$	 and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combibed. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c: April 17, 1875. 4,652S. H. Hall, Belle Flaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655I. Levy, Ellaville, Fla., U. S. Fence pick chine. April 20, 1875. 4,655W. Dekker et al., Brampton, Ont. Hot an stove. April 20, 1875. 4,659J. S. Kemp, Magog, P. Q. Manure-spr machine. April 21, 1875. 4,650B. Curtis, Jr., Boston, Mass., U. S. Buci tachment. April 21, 1875.
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NDEX OF INVENTIONS FOR WHICH etters Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.] larm, burglar, L. M. Johnson	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,221\\ 162,239\\ 162,211\\ 162,251\\ 162,280\\ 162,381\\ 162,381\\ 162,381\\ 162,370\\ 162,381\\ 162,370\\ 162,432\\ 162,368\\ 162,159\\ 162,432\\ 162,432\\ 162,432\\ 162,452\\ 162,452\\ 162,415\\ 162,452\\ 162,415\\ 162,452\\ 162,415\\ 162,452\\ 162,415\\ 162,425\\ 162,415\\ 162,425\\ 162,415\\ 162,425\\ 162,425\\ 162,415\\ 162,423\\ 162,275\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stear rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Store tweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, L. Postawka Table, folding, J. Bradfietd Table, folding, J. Bradfietd Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Tyoy listol, A. E Taylor Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck markers, H. C. Goodrich Vehicle sate, S. T. Gamwell Vehicle sate, R. Rakestraw Vehicle spring, G. F. Godiey Vehicle wheel, J. Curtis Vessel for infiammable liquids, Chase and Vessel, metallic, W. B. Scalfe (r) Vessel, porpelling and steering, Dorman Wagon brake, O. T. Baker	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\162,468\162,150\\ 162,345\162,150\162,150\162,345\162,345\162,345\162,345\162,243\162,243\162,213\162,213\162,213\162,213\162,213\162,213\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,202\162,213\162,213\162,213\162,213\162,213\162,213\162,213\162,214\162,216\162,216\162,216\162,310\162,310\162,216\162,310\162,310\162,310\162,310\162,310\162,310\162,310\162,310\162,310\162,310\162,310\162,310\162,313\162,313\162,337\162,3$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge c: April 17, 1875. 4,652S. H. Hall, Belle Flaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655S. Rydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875. 4,656S. Rydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875. 4,657I. Levy, Ellaville, Fla., U. S. Fence pick chine. April 20, 1875. 4,659J. S. Kemp, Magog, P. Q. Manure-spr machine. April 21, 1875. 4,660B. Curtis, Jr., Boston, Mass., U. S. Buci tachment. April 21, 1875. 4,660B. Curtis, Jr., Boston, Mass., U. S. Buci tachment. April 21, 1875. 4,660W. M. Shea, Trenton, Ont. Milk and Hquid C April 21, 1875. 4,662Wm. J. Mansell, Toronto, Ont. Self-acti coupling. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland <i>et a</i> manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland <i>et a</i> manufacture. April 21, 1875.
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Beardslee</td> <td>$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,211\\ 162,251\\ 162,251\\ 162,251\\ 162,383\\ 162,351\\ 162,370\\ 162,383\\ 162,370\\ 162,383\\ 162,370\\ 162,432\\ 162,383\\ 162,370\\ 162,432\\ 162,383\\ 162,370\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,425\\ 162,112\\ 162,425\\ 162,112\\ 162,425\\ 162,112\\ 162,423\\ 162,272\\ 162,272\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,424\\ 162,444\\ 162,4$</td> <td>Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stear rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, Olding, J. Bradfietd Table, folding, J. Bradfietd Tapie, folding, J. Bradfietd Tapie, folding, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Tuck markers, H. C. Goodrich Tuck markers, H. C. Goodrich Vehicle saite, S. T. Gamwell Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle sheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vessel for inflammable liquids, Chase and Vessels propelling and steering, Dorman Wagon brake, O. T. Baker Wash bench, extension, S. Wiswall (r) Wash bench, extension, S. Wiswall (r)</td> <td>$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\162,468\162,416\162,150\162,150\162,150\162,150\162,345\162,345\162,345\162,345\162,243\162,243\162,243\162,243\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,202\162,215\162,215\162,216\162,216\162,216\162,216\162,216\162,216\162,216\162,211\162,211\162,211\162,211\162,211\162,237\162,237\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,38\\$</td> <td>and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. 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Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,211\\ 162,251\\ 162,251\\ 162,251\\ 162,383\\ 162,351\\ 162,370\\ 162,383\\ 162,370\\ 162,383\\ 162,370\\ 162,432\\ 162,383\\ 162,370\\ 162,432\\ 162,383\\ 162,370\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,432\\ 162,425\\ 162,112\\ 162,425\\ 162,112\\ 162,425\\ 162,112\\ 162,423\\ 162,272\\ 162,272\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,275\\ 162,424\\ 162,444\\ 162,4$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stear rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, Olding, J. Bradfietd Table, folding, J. Bradfietd Tapie, folding, J. Bradfietd Tapie, folding, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Tuck markers, H. C. Goodrich Tuck markers, H. C. Goodrich Vehicle saite, S. T. Gamwell Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle sheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vessel for inflammable liquids, Chase and Vessels propelling and steering, Dorman Wagon brake, O. T. Baker Wash bench, extension, S. Wiswall (r) Wash bench, extension, S. Wiswall (r)	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\162,468\162,416\162,150\162,150\162,150\162,150\162,345\162,345\162,345\162,345\162,243\162,243\162,243\162,243\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,149\162,202\162,215\162,215\162,216\162,216\162,216\162,216\162,216\162,216\162,216\162,211\162,211\162,211\162,211\162,211\162,237\162,237\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,238\162,38\\$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655A. 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Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,251\\ 162,221\\ 6,338\\ 162,251\\ 162,251\\ 162,251\\ 162,373\\ 162,383\\ 162,351\\ 162,373\\ 162,432\\ 162,383\\ 162,351\\ 162,432\\ 162,363\\ 162,432\\ 162,285\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,424\\ 162,285\\ 162,272\\ 162,272\\ 162,272\\ 162,272\\ 162,272\\ 162,272\\ 162,424\\ 162,285\\ 162,412\\ 162,263\\ 162,410\\ 162,228\\ 162,424\\ 162,228\\ 162,424\\ 162,228\\ 162,424\\ 162,228\\ 162,424\\ 162,228\\ 162,424\\ 162,228\\ 162,424\\ 162,228\\ 162,424\\ 162,228\\ 162,228\\ 162,424\\ 162,228\\ 162,228\\ 162,424\\ 162,228$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. 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Beardsice	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,405\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,221\\ 6,338\\ 162,320\\ 162,251\\ 162,251\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,377\\ 162,432\\ 162,388\\ 162,351\\ 162,372\\ 162,432\\ 162,388\\ 162,147\\ 162,368\\ 162,147\\ 162,265\\ 162,127\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,272\\ 162,272\\ 162,272\\ 162,275\\ 162,421\\ 162,263\\ 162,272\\ 162,272\\ 162,275\\ 162,424\\ 162,263\\ 162,216\\ 162,162$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, magazine, R. Blum Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. 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McWane	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,413\\ 162,413\\ 162,413\\ 162,361\\ 162,344\\ 162,365\\ 6,390\\ 162,344\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,215\\ 162,301\\ 162,215\\ 162,215\\ 162,215\\ 162,216\\ 162,215\\ 162,216\\ 162,216\\ 162,216\\ 162,212\\ 162,216\\ 162,212\\ 162,216\\ 162,202\\ 162,353\\ 162,255\\ 162,255\\ 162,255\\ 162,120\\ 162,222\\ 162,355\\ 162,120\\ 162,222\\ 162,355\\ 162,120\\ 162,224\\ 162,225\\ 162,178\\ 162,216\\ 162,214\\ 162,222\\ 162,355\\ 162,190\\ 162,224\\ 162,214\\ 162,214\\ 162,214\\ 162,386\\ 162,386\\ 162,386\\ 162,386\\ 162,386\\ 162,389\\ 162,386\\ 162,389\\ 162,386\\ 162,399\\ 16$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence of April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen ger and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. 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Beardslee</td> <td>$\begin{array}{c} 162,213\\ 162,223\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,339\\ 162,331\\ 162,251\\ 162,281\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,282\\ 162,351\\ 162,282\\ 162,351\\ 162,282\\ 162,285\\ 162,159\\ 162,159\\ 162,159\\ 162,159\\ 162,159\\ 162,259\\ 162,112\\ 162,252\\ 162,112\\ 162,253\\ 162,275\\ 162,218\\ 162,164\\ 162,264\\ 162,275\\ 162,171\\ 162,164\\ 162,265\\ 162,171\\ 162,164\\ 162,275\\ 162,218\\ 162,171\\ 162,164\\ 162,275\\ 162,218\\ 162,171\\ 162,164\\ 162,275\\ 162,171\\ 162,182\\ 162,171\\ 162,164\\ 162,275\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,275\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,171\\ 162,182\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,275\\ 162,282\\ 162,2$</td> <td>Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stear rod, A. W. Porter Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, Colding, J. Bradfietd Table, folding, J. Bradfietd Tapie, folding, J. Bradfietd Tapie, folding, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Tuck markers, H. C. Goodrich Tuck markers, H. C. Goodrich Vehicle axle, S. T. Gamwell Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, A. A. Philbrick Vehicle wheel, A. A. 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Worden</td> <td>$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\162,468\162,416\162,150\162,150\162,150\162,150\162,345\162,345\162,345\162,345\162,243\162,243\162,243\162,245\162,149\162,129\162,216\162,216\162,216\162,216\162,216\162,216\162,216\162,216\162,216\162,216\162,210\162,383\6,398\162,383\162,389\162,389\162,399\162,399\162,399\162,399\162,399\162,399\162,391\162,399\162,399\162,391\162,399\162,399\162,391\162,391\162,399\162,399\162,399\162,391\162,391\162,391\162,391\162,390\162,399\162,399\162,399\162,391\162$</td> <td>and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Ont. Fence of April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,653E. 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Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,397\\ 162,397\\ 162,388\\ 162,351\\ 162,397\\ 162,397\\ 162,432\\ 162,388\\ 162,351\\ 162,397\\ 162,432\\ 162,388\\ 162,351\\ 162,397\\ 162,432\\ 162,388\\ 162,351\\ 162,191\\ 162,285\\ 162,253\\ 162,412\\ 162,253\\ 162,272\\ 162,272\\ 162,272\\ 162,285\\ 162,412\\ 162,285\\ 162,272\\ 162,272\\ 162,272\\ 162,285\\ 162,412\\ 162,285\\ 162,215\\ 162,171\\ 162,285\\ 162,412\\ 162,285\\ 162,212\\ 162,218\\ 162,218\\ 162,162\\ 162,218\\ 162,160\\ 162,253\\ 162,162\\ 162,188\\ 162,160\\ 162,253\\ 162,162\\ 162,218\\ 162,160\\ 162,253\\ 162,162\\ 162,218\\ 162,160\\ 162,253\\ 162,410\\ 162,253\\ 162,218\\ 162,160\\ 162,253\\ 162,410\\ 162,253\\ 162,218\\ 162,160\\ 162,253\\ 162,410\\ 162,253\\ 162,218\\ 162,160\\ 162,253\\ 162,410\\ 162,253\\ 162,218\\ 162,160\\ 162,253\\ 162,248\\ 162,428\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,248\\ 162,248\\ 162,248\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,253\\ 162,218\\ 162,248\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,238\\ 162,218\\ 162,248\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,422\\ 162,238\\ 162,248\\ 162,248\\ 162,422\\ 162,4$	Soda water generator. 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Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,395\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,215\\ 162,231\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,397\\ 162,338\\ 162,351\\ 162,351\\ 162,377\\ 162,432\\ 162,397\\ 162,432\\ 162,397\\ 162,432\\ 162,282\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,272\\ 162,265\\ 162,272\\ 162,273\\ 162,248\\ 162,171\\ 162,164\\ 162,171\\ 162,164\\ 162,171\\ 162,164\\ 162,171\\ 162,164\\ 162,171\\ 162,164\\ 162,273\\ 162,248\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stair rod, A. W. Porter Store and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, magazine, R. Blum Stove, magazine, R. Blum Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. 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Maxson Washing machine, E. W. Maxson Washing machine, C. L. Thiery Water closet seat, J. E. Walter Water closet seat, J. E. Walter Washing machine, C. L. Thiery Water closet seat, J. E. Walter Washing machine, C. L. Thiery Water closet seat, J. E. Walter Water	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,413\\ 162,413\\ 162,363\\ 162,344\\ 162,365\\ 6,390\\ 162,344\\ 162,345\\ 162,243,162,244\\ 162,215\\ 162,213,162,244\\ 162,215\\ 162,213\\ 162,222\\ 162,353\\ 162,235\\ 162,133\\ 162,354\\ 162,354\\ 162,$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,669B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655B. Hydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875. 4,655B. Rydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875. 4,658Wm. Peaker et al., Drampton, Ont. Hot ah stove. April 20, 1875. 4,660B. Curtis, Jr., Boston, Mass., U. S. Buci tachment. April 21, 1875. 4,660W. H. Landon. Princeton, Ont. Self-actif coupling. April 21, 1875. 4,662Wm. J. Mansell, Toronto, Ont. Self-actif coupling. April 21, 1875. 4,662W. H. Landon. Princeton, Ont. Parlor c stove. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. 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NDEX OF INVENTIONS FOR WHICH etters Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. Itose marked (r) are reissued patents. Itose marked (r) are reissued patents. Itose marked (r) are reissued patents. Itarm, burgiar, L. M. Johnson, 162,235 hpan for stoves, A. T. Bleyley, 162 267 sphaltum to a liquid, reducing, A. K. Lee, 163,384 whing, J. Eller. 162,631 are the ad adjuster, Granger & Smith, 162,233 are the ad adjuster, Granger & Smith, 162,231 are stave adjuster, Granger & Smith, 162,231 are the ad adjuster, Granger & Smith, 162,231 are the ad adjuster, Granger & Smith, 162,231 are the ad adjuster, Granger & Smith, 162,231 asket stuff, machine for shaving, R. J. Brooks, JT 162,314 asket stuff, machine for shaving, R. J. Brooks, JT 162,316 asket stuff, machine, E. Schlenker, 162,142 at for blast holes, expanding, G. Frishee, 162,041 it for blast holes, expanding, G. Frishee, 162,341 out soles, edge setting, B. J. Tayman, 162,206 ottle, L. F. C. Schridt, 162,344 rolite stoper, R. & D. L. Boljermann, 162,345 rolle wire fastening, H. W. Yerington, 162,345 rolle, M. A. Buermann, 162,346 out soles, edge setting, B. J. Tayman, 162,206 ottle, U. F. C. Schridt, 162,344 rolle, Schender, 162,344 rolle, Schender, 162,345 rolle, H. A. Buermann, 162,345 rolle, H. A. Buermann, 162,345 rolle, H. J. Chamberliu, 162,142 ronzing machine, Forbes & Hallock, 162,142 uil's eye, W. Wilcox, 162,15 urner, lamp, J. Pigot, 162,345 ans, nozzle for oll, W. Doe, 162,223 ap box, A. Huskamp, 163,347 ar brake, A. Barker, 162,345 ar brake, Laauwe & Winkoop, 162,457 ar coupling, J. G. Xikoe, 162,345 ar coupling, J. G. Wilson, 162,445	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,221\\ 162,221\\ 162,230\\ 162,251\\ 162,251\\ 162,251\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,377\\ 162,432\\ 162,388\\ 162,351\\ 162,372\\ 162,432\\ 162,388\\ 162,147\\ 162,368\\ 162,147\\ 162,263\\ 162,259\\ 162,425\\ 162,259\\ 162,425\\ 162,272\\ 162,275\\ 162,421\\ 162,272\\ 162,272\\ 162,272\\ 162,272\\ 162,272\\ 162,272\\ 162,274\\ 162,263\\ 162,274\\ 162,263\\ 162,274\\ 162,263\\ 162,274\\ 162,263\\ 162,274\\ 162,263\\ 162,274\\ 162,263\\ 162,214\\ 162,160\\ 162,253\\ 162,214\\ 162,160\\ 162,253\\ 162,214\\ 162,143\\ 162,247\\ 162,274\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stowe and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. 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Walter Weils, pumping, Nickerson and Streeter for the seater	$\begin{array}{c} 162,246\\ 6,386\\ 6,380\\ 162,416\\ 162,413\\ 162,413\\ 162,413\\ 162,363\\ 162,344\\ 162,365\\ 6,390\\ 162,344\\ 162,345\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,215\\ 162,215\\ 162,215\\ 162,215\\ 162,215\\ 162,215\\ 162,216\\ 162,215\\ 162,216\\ 162,215\\ 162,216\\ 162,216\\ 162,202\\ 162,355\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,255\\ 162,262\\ 162,255\\ 162,255\\ 162,262\\ 162,255\\ 162,255\\ 162,255\\ 162,262\\ 162,255\\ 162,216\\ 162,222\\ 162,355\\ 162,216\\ 162,222\\ 162,355\\ 162,162\\ 162,222\\ 162,355\\ 162,216\\ 162,222\\ 162,355\\ 162,226\\ 162,355\\ 162,226\\ 162,355\\ 162,356\\ 16$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,669B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. 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NDEX OF INVENTIONS FOR WHICE etters, Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.] Iarm, burglar, L. M. Johnson. 162,235 larm, burglar, Kennoch & Gilliland. 162,235 ahrn, burglar, Kennoch & Gilliland. 162,235 ahr for stoves, A. T. Bleyley. 162 aby walker, I. D. Clark 162,351 ale tle, J. W. Deyo. 162,351 ale tle, J. W. Deyo. 162,325 arrel head adjuster, Granger & Smith. 162,324 asket stuff, machine for shaving, H. J. Brooks, JT 162,145 162,401 tred tage, H. Belmer. 162,401 tf or blast holes, expanding, G. Frishee. 162,163 tf or blast holes, expanding, G. Frishee. 162,400 oot soles, edge setting, B. J. Tayman. 162,235 ridge, iron, J. B. Eads. 162,435 ridge, iron, J. B. Eads. 162,437 ast, stand ofi, J. D. Gray (r) 6,326 oot soles, edge setting, B. J. Tayman. 162,247 tigge, iron, J. B. Eads. 162,357 ridge (iron, J. B. Eads. 162,357	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,395\\ 162,395\\ 162,395\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,215\\ 162,231\\ 162,251\\ 162,231\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,397\\ 162,383\\ 162,351\\ 162,373\\ 162,383\\ 162,351\\ 162,373\\ 162,432\\ 162,397\\ 162,432\\ 162,397\\ 162,432\\ 162,253\\ 162,159\\ 162,159\\ 162,159\\ 162,162\\ 162,253\\ 162,171\\ 162,265\\ 162,275\\ 162,244\\ 162,275\\ 162,275\\ 162,275\\ 162,244\\ 162,275\\ 162,275\\ 162,244\\ 162,275\\ 162,244\\ 162,247\\ 162,248\\ 162,247\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Steam trap, G. M. Hopkins Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, Colding, J. Bradfeid Table, folding, J. Bradfeid Taning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Tuck markers, H. C. Goodrich Tuck markers, H. C. Goodrich Vehicle axle, S. T. Gamwell Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. S. Wightman Vessel for inflammable liquids, Chase and Vessels propelling and steering, Dorman Wagon brake, O. T. Baker Wagon tongue attachment, W. M. Bernhas Walls, cramp for hollow, R. Hinvest Washing machine, J. A. Eberly Washing machine, J. W. Hampton Washing machine, J. W. Hampton Washing machine, A. E. Worden Washing machine, A. E. Worden Washing machine, A. E. Worden Washing machine, A. E. Water Washing machine, A. E. Water Washing machine, A. E. Water Water closet seat, J. E. Walter Water wheel, T. Kring Weil perforating tube, C. L. Travis Weils, pumpling, Nickerson and Streeter . Wick mill, M. Gore	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,68\\ 162,413\\ 162,150\\ 162,345\\ 162,345\\ 162,345\\ 162,345\\ 162,345\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,213\\ 162,243\\ 162,213\\ 162,243\\ 162,213\\ 162,243\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,214\\ 162,214\\ 162,216\\ 162,202\\ 162,355\\ 162,192\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,237\\ 162,224\\ 162,350\\ 162,224\\ 162,350\\ 162,224\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,388\\ 162,388\\ 162,388\\ 162,388\\ 162,388\\ 162,389\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,293\\ 162,414\\ 162,241\\ 162,231\\ 162,235\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,350\\ 162,236\\ 162,236\\ 162,238\\ 162,435\\ 162,284\\ 162,435\\ 162,284\\ 162,435\\ 162,284\\ 162,284\\ 162,284\\ 162,288\\ 162,286\\ 1$	and fuel saver. 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NDEX OF INVENTIONS FOR WHICH etters Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. Itose marked (r) are reissued patents. Itose marked (r) are reissued patents. Itose marked (r) are reissued patents. Itarm, burgiar, L. M. Johnson, 162,235 atom, burgiar, Kennoch & Gilliland, 162,239 sh pan for stoves, A. T. Bleyley, 162 267 sphaltum to a liquid, reducing, A. K. Lee, 163,384 wning, J. Eller, 162,261 atom to a liquid, reducing, A. K. Lee, 163,384 wning, J. Eller, 162,261 ale tie, J. W. Deyo, 162,253 ale tie, J. W. Deyo, 162,251 ale tie, J. W. Deyo, 162,251 urel head adjuster, Granger & Smith, 162,243 asket stuff, machine for shaving, R. J. Brooks, JF 162,316 Ird cage, H. Belmer, 162,316 Ird cage, H. Belmer, 162,316 Ird cage, H. Belmer, 162,316 Ird cage, H. Belmer, 162,316 Ird cage, H. Nordyke, 162,452 ti stock, E. R. Charles, 162,271 olt for blast holes, expanding, G. Frishee, 162,143 tot soles, edge setting, B. J. Tayman, 162,200 otile, L. F. C. Schmidt, 162,316 ottle stopper, R. & D. L. Bollermann, 162,346 ottle wire fastening, H. W. Yerington, 162,347 ride, ifon, J. B. Eads, 162,357 ride bit, A. Buermann, 162,348 roller, H. J. Chamberliu, 162,12 in change, I. Makamp, 162,348 roller, H. J. Chamberliu, 162,12 in uschine, Forbes & Hallock, 162,451 in sina oli, J. D. Gray (r), 6,326 ans, nozzle for oll, W. Doe, 162,273 ar brake, A. Barker, 162,340 ar brake, D. D. Klimel, 162,340 ar brake, D. D. Klimel, 162,340 ar coupling, G. C. Schow, 162,173 ar coupling, J. G. Baker 162,340 ar for inclined planes, J. Earnshaw, 162,343 ar for inclined planes, J. Earnshaw, 162,343 ar for inclined planes, J. Earnshaw, 162,345 ar for inclined planes, J. Earnshaw, 162,345 ar for inclined planes, J. Earnshaw, 162,345 ar for inclined planes, J. Earnshaw, 162,354	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,221\\ 162,239\\ 162,251\\ 162,251\\ 162,251\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,377\\ 162,432\\ 162,388\\ 162,157\\ 162,285\\ 162,127\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,272\\ 162,275\\ 162,415\\ 162,272\\ 162,275\\ 162,272\\ 162,275\\ 162,272\\ 162,275\\ 162,219\\ 162,219\\ 162,219\\ 162,219\\ 162,219\\ 162,219\\ 162,219\\ 162,219\\ 162,219\\ 162,210\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,225\\ 162,212\\ 162,238\\ 162,110\\ 162,241\\ 162,238\\ 162,160\\ 162,238\\ 162,160\\ 162,238\\ 162,160\\ 162,238\\ 162,160\\ 162,238\\ 162,160\\ 162,238\\ 162,160\\ 162,238\\ 162,162\\ 162,214\\ 162,238\\ 162,160\\ 162,238\\ 162,162\\ 162,274\\ 162,237\\ 162,277\\ 162,2$	Soda water generator. 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Smith	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,68\\ 162,413\\ 162,68\\ 162,351\\ 162,150\\ 162,341\\ 162,365\\ 6,390\\ 162,343\\ 162,243\\ 162,245\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,215\\ 162,215\\ 162,215\\ 162,216\\ 162,439\\ 162,215\\ 162,216\\ 162,439\\ 162,215\\ 162,216\\ 162,439\\ 162,215\\ 162,216\\ 162,216\\ 162,355\\ 162,190\\ 162,268\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,222\\ 162,226\\ 162,355\\ 162,356\\ 162,359\\ 162,359\\ 162,368\\ 162,388\\ 162,388\\ 162,389\\ 162,389\\ 162,389\\ 162,389\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,399\\ 162,390\\ 162,$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648L. W. Russell, Gananogue, Out. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. 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NDEX OF INVENTIONS FOR WHICE etters Patent of the United States were Granted in the Week ending April 20, 1875, AND EACH BEARING THAT DATE. Itmm, burglar, L. M. Johnson Iarm, burglar, Kennoch & Gilliland 162,235 sh pan for stoves, A. T. Bleyley 162,351 alern, burglar, Kennoch & Gilliland 162,235 sh pan for stoves, A. T. Bleyley 162,351 alertle, J. W. Deyo 162,351 alertle, J. W. Deyo alertle, J. W. Deyo arrel stave adjuster, Granger & Smith 162,351 arrel stave adjuster, C. Springer, 162,361 ird cage, J. Maxhetmer. 162,401 it for blast holes. expanding, G. Frishee 162,102 it for blast holes. expanding, G. S. Heaton 162,361 ottle, L. P. C. Schingt, H. W. Yerington 162,362 rid traading machine, E. Schlenker. 162,363 ottle stopper, R. & D. L. Bollermann. 162,364 otthreading machine, Forobes & Hallock	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,390\\ 162,405\\ 162,393\\ 162,393\\ 162,393\\ 162,393\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,291\\ 162,397\\ 162,432\\ 162,383\\ 162,351\\ 162,397\\ 162,432\\ 162,383\\ 162,351\\ 162,397\\ 162,432\\ 162,363\\ 162,285\\ 162,191\\ 162,285\\ 162,212\\ 162,285\\ 162,412\\ 162,285\\ 162,212\\ 162,251\\ 162,423\\ 162,251\\ 162,423\\ 162,251\\ 162,423\\ 162,253\\ 162,251\\ 162,423\\ 162,285\\ 162,217\\ 162,285\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,212\\ 162,213\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,238\\ 162,214\\ 162,244\\ 162,238\\ 162,244\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stear rod, A. W. Porter Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthlessen 162,242, 1 Table, L. Postawka Table, folding, J. Bradfietd Tanning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Tolegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith Tobacco package, J. D. Culp Trowel, plasterer's, C. Disston Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Tuck markers, H. C. Goodrich Vehicle aseat, R. Rakestraw Vehicle seat, R. Rakestraw Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle wheel, J. Curtis Vehicle wheel, J. Curtis Vehicle wheel, J. S. Wightman Vessel forinfiammable liquids, Chase and Vessel, motelling and steering, Dornan Wagon brake, O. T. Baker Washing machine, J. S. Wiswall (r) Washing machine, J. M. Hinvest Washing machine, J. M. Hinvest Washing machine, J. M. Hampton Washing machine, J. M. Hampton Washing machine, J. W. Hampton Washing machine, J. W. Hampton Washing machine, J. W. Hampton Washing machine, J. W. Hampton Washing machine, J. K. Huberd Washing machine, J. K. Wilswall (r) Washing machine, J. K. Water Water closet seat, J. E. Walter With washing machine, J. C. L. Thiery Water closet seat, J. E. Walter With and Kaser, F. Steffany Weil perforating tube, C. L. Travis Weil perforating tube, C. L. Travis Weil, pumping, Nickerson and Streeter . Wick raiser, H. C. Lart Window washer, C. H. Smit	$\begin{array}{c} 162,246\\ 6,386\\ 162,416\\ 162,468\\ 162,416\\ 162,150\\ 162,150\\ 162,150\\ 162,345\\ 162,345\\ 162,345\\ 162,345\\ 162,345\\ 162,345\\ 162,243\\ 162,243\\ 162,245\\ 162,215\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,149\\ 162,127\\ 162,127\\ 162,127\\ 162,127\\ 162,127\\ 162,127\\ 162,127\\ 162,127\\ 162,202\\ 162,216\\ 162,225\\ 162,216\\ 162,225\\ 162,258\\ 162,258\\ 162,258\\ 162,216\\ 162,221\\ 162,350\\ 6,391\\ 6,393\\ 6,398\\ 6,398\\ 6,398\\ 162,383\\ 6,398\\ 162,383\\ 162,383\\ 162,384\\ 162,399\\ 162,399\\ 162,399\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,281\\ 162,383\\ 162,383\\ 162,383\\ 162,384$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. 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Beardslee</td> <td>$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,405\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,221\\ 6,338\\ 162,239\\ 162,251\\ 162,251\\ 162,370\\ 162,388\\ 162,351\\ 162,370\\ 162,388\\ 162,351\\ 162,388\\ 162,351\\ 162,388\\ 162,351\\ 162,368\\ 162,351\\ 162,368\\ 162,351\\ 162,368\\ 162,351\\ 162,432\\ 162,368\\ 162,351\\ 162,428\\ 162,368\\ 162,428\\ 162,259\\ 162,425\\ 162,425\\ 162,425\\ 162,425\\ 162,425\\ 162,253\\ 162,425\\ 162,253\\ 162,425\\ 162,272\\ 162,272\\ 162,263\\ 162,216\\ 162,285\\ 162,216\\ 162,216\\ 162,228\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,218\\ 162,217\\ 162,343\\ 162,274\\ 162,241\\ 162,241\\ 162,241\\ 162,243\\ 162,274\\ 162,241\\ 162,243\\ 162,274\\ 162,241\\ 162,242\\ 162,175\\ 162,270\\ 162,175\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,270\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,277\\ 162,273$</td> <td>Soda water generator. 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Beardslee</td> <td>$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,239\\ 162,239\\ 162,393\\ 162,231\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,377\\ 162,383\\ 162,351\\ 162,373\\ 162,383\\ 162,351\\ 162,383\\ 162,351\\ 162,265\\ 162,265\\ 162,265\\ 162,265\\ 162,272\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,285\\ 162,274\\ 162,274\\ 162,277\\ 162,2$</td> <td>Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r). Street sweeping machine, W. M. Blume Sugar, refining, F. O. 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Smith Wood, bending</td> <td>$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,413\\ 162,413\\ 162,365\\ 162,343\\ 162,345\\ 162,345\\ 162,345\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,245\\ 162,439\\ 162,439\\ 162,439\\ 162,439\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,353\\ 162,258\\ 162,258\\ 162,353\\ 162,264\\ 162,264\\ 162,264\\ 162,264\\ 162,264\\ 162,264\\ 162,264\\ 162,383\\ 6,398\\ 162,389\\ 162,380\\ 162,389\\ 162,380\\ 16$</td> <td>and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Out. Fence of April 17, 1875. 4,669B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. 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Steffany Watch case, C.</td><td>$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,68\\ 162,413\\ 162,365\\ 6,390\\ 162,343\\ 162,365\\ 6,390\\ 162,343\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,215\\ 162,439\\ 162,215\\ 162,140\\ r. 162,427\\ 162,140\\ r. 162,140\\ r. 162,143\\ 162,258\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,225\\ 162,225\\ 162,225\\ 162,355\\ 162,192\\ 162,261\\ 162,355\\ 162,222\\ 162,258\\ 162,355\\ 162,192\\ 162,261\\ 162,359\\ 162,359\\ 162,359\\ 162,383\\ 6,398\\ 162,383\\ 6,398\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,384\\$</td><td>and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,669B. Sloper, Montreal, P. Q. 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Steffany Watch case, C.	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,68\\ 162,413\\ 162,365\\ 6,390\\ 162,343\\ 162,365\\ 6,390\\ 162,343\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,243\\ 162,215\\ 162,439\\ 162,215\\ 162,140\\ r. 162,427\\ 162,140\\ r. 162,140\\ r. 162,143\\ 162,258\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,225\\ 162,225\\ 162,225\\ 162,355\\ 162,192\\ 162,261\\ 162,355\\ 162,222\\ 162,258\\ 162,355\\ 162,192\\ 162,261\\ 162,359\\ 162,359\\ 162,359\\ 162,383\\ 6,398\\ 162,383\\ 6,398\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,383\\ 162,384\\ $	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,669B. Sloper, Montreal, P. Q. 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Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,235\\ 162,235\\ 162,231\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,377\\ 162,383\\ 162,351\\ 162,377\\ 162,432\\ 162,377\\ 162,432\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,252\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,253\\ 162,272\\ 162,263\\ 162,272\\ 162,272\\ 162,273\\ 162,244\\ 162,171\\ 162,265\\ 162,272\\ 162,273\\ 162,244\\ 162,171\\ 162,263\\ 162,171\\ 162,263\\ 162,272\\ 162,273\\ 162,244\\ 162,171\\ 162,164\\ 162,171\\ 162,164\\ 162,253\\ 162,274\\ 162,273\\ 162,248\\ 162,175\\ 162,248\\ 162,175\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,248\\ 162,247\\ 162,361\\ 162,277\\ 162,361\\ 162,245\\ 162,2440\\ 162,247\\ 162,2440\\ 162,247\\ 162,247\\ 162,361\\ 162,247\\ 162,361\\ 162,247\\ 162,361\\ 162,246\\ 162,248\\ 162,247\\ 162,361\\ 162,246\\ 162,248\\ 162,247\\ 162,361\\ 162,248\\ 162$	Soda water generator. 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NDEX OF INVENTIONS For WHICH eletters Patent of the United States were Granted in the Week ending April 20, 1875, AD BACH BEARING THAT DATE. Itose marked (r) are reissued patents. Itose marked (r) are reissued patents. Itose marked (r) are reissued patents. Itarn, burgiar, L. M. Johnson	Grain scourer, M. D. 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Yerington, 162,348 ottle stoper, R. & D. L. Boljermann, 162,348 ottle stoper, R. & D. L. Boljermann, 162,348 ottle stoper, R. & D. L. Boljermann, 162,348 ottle wire fastening, H. W. Yerington, 162,451 fox, lanp chinney, N. Harris, 162,285 ridge, iron, J. B. Eads, 164,357 ridge bit, A. Buermann, 162,348 troiler, H. J. Chamberita, 162,12 ronzing machine, Forbes & Hallock 162,415 uurrer, lamp, J. Pigot, 162,417 arbrake, D. D. Kimel, 162,245 ar brake, A. Barker, 162,300 an, stand ofl, J. D. Gray (r), 6,266 ars, nozzle for oll, W. Doe, 162,223 arbrake, A. Barker, 162,305 ar for neithed planes, J. Earnshaw, 162,345 ar for neithed planes, J. Earnshaw, 162,455 ard roe levated railways, R. Stone, 162,455 arriage syning, W. F. Dusenbury, 162,455 ara	Grain scourer, M. D. 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Kring Water wheel, T. Kring Weil perforsting tube, C. L. Travis Window washer, C. fl. Smith. Wood, bending, S. R. Bailey Wrench, H. R. Sioat Yoke, neck, C. R. Moon Window washer, C. fl. Smith. Wood, bending, S. R. Bailey Wrench, H. R. Sioat Yoke, neck, C. R. Moon Strave, Strave, S		and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,648E. W. Russell, Gananogue, Ont. Fence c April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,650S. R. Balley, Boston, Mass., U. S. Wood- ing machine. April 17, 1875. 4,651W. G. Rawbonc, Toronto, Ont. Cartridge cr April 20, 1875. 4,653J. R. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,654E. Tiffany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,656S. Rydbeck, Red Wing, Minn., U. S. Mor machine. April 20, 1875. 4,658U. R. 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Eadol, 162,314 (of the wire fastening, H. W. Yerlington 162,348 (folle stopler, R. & D. L. Bollermann, 162,348 (folle, H. F. C. Schwidt 162,164 (fd, 21, 2 (fd cage, IG, J. S. Eadol, 162,347 (fd cage, IG, J. S. Eadol, 162,347 (fd cage, IG, J. S. Eadol, 162,348 (folle, S. C. Young, 164,215 (fd cage, IG, J. S. Gagert, 162,348 (folle, H. J. Chamberliu, 162,425 (fd cage, IG, S. Schwidt, 162,415 (fd cage, IG, S. Schwidt,	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,225\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,329\\ 162,405\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,329\\ 162,311\\ 162,251\\ 162,251\\ 162,251\\ 162,377\\ 162,388\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,351\\ 162,425\\ 162,423\\ 162,423\\ 162,423\\ 162,424\\ 162,444\\ 162,238\\ 162,164\\ 162,444\\ 162,247\\ 162,444\\ 162,247\\ 162,341\\ 162,440\\ 162,4$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. 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Tau April 20, 1875. 4,653J. R. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,654E. Tillany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. G. Gray St. John, N. B. Mowing ma April 20, 1875. 4,655A. Bytdbeck, Red Wing, Minn., U. S. Mo- machine. April 20, 1875. 4,655B. Rydbeck, Red Wing, Minn., U. S. Mo- machine. April 20, 1875. 4,658Wm. Peaker et al., Drampton, Ont. Hot alr stove. April 20, 1875. 4,669B. Curtis, Jr., Boston, Mass., U. S. Buch- tachment. April 21, 1875. 4,660Wm. Shea, Trenton, Ont. Milk and Hquid et April 21, 1875. 4,662Wm. J. Mansell, Toronto, Ont. Self-acti coupling. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et al. manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et al. manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et al. manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et al. manufacture. 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Beardslee	$\begin{array}{c} 162,213\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,215\\ 162,211\\ 162,251\\ 162,251\\ 162,251\\ 162,251\\ 162,307\\ 162,308\\ 162,308\\ 162,308\\ 162,308\\ 162,308\\ 162,205\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stove and steam heater, cooking T. Pento Stove, cooking, J. R. Hyde (r) Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r) Stove, reservoir cooking, J. R. Hyde (r) State, refining, F. O. Matthicssen 162,242, i Table, L. Postawka Table, dolding, J. Bradfietd Taning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler. Thill coupling, J. S. Smith. Tobacco package, J. D. Culp Towel, plasterer's, C. 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Chubbard Washing machine, S. R. Bailey Wrench, H. R. Sioat Yoke, neck, C. R. Moon Wrench, H. R. Sioat Yoke, neck, C. R. Moon Wrench, H. R. Sioat Yoke,	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,413\\ 162,413\\ 162,365\\ 162,343\\ 162,345\\ 162,343\\ 162,345\\ 162,243,162,244\\ 162,245\\ 162,243,162,244\\ 162,245\\ 162,243\\ 162,243\\ 162,243\\ 162,245\\ 162,430\\ 162,430\\ 162,430\\ 162,430\\ 162,258\\ 162,258\\ 162,355\\ 162,258\\ 162,355\\ 162,258\\ 162,355\\ 162,258\\ 162,355\\ 162,258\\ 162,355\\ 162,258\\ 162,355\\ 162,261\\ 162,258\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,355\\ 162,356\\ 162,358\\ 162,358\\ 162,358\\ 162,358\\ 162,358\\ 162,358\\ 162,358\\ 162,359\\ 162,310\\ 162,162\\ 224\\ 162,258\\ 162,359\\ 162,380\\ 162,38$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,669S. R. Balley, Boston, Mass., U. S. 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Boljermann. 162,316 otile wire fastending, M. W. Yerlugton 162,314 ind the adopter, R. & D. L. Boljermann. 162,316 otile wire fastending, H. W. Yerlugton 162,451 iox, Ianno chimey, N. Harris. 162,285 ridge, (ron, J. B. Eads. 163,257 ridie bit, A. Buermann 162,316 otile wire fastending, H. W. Yerlugton 162,451 iox, Ianno chimes, S. Hartis. 162,285 ridge, (ron, J. B. Eads. 162,357 ridie bit, A. Buermann 162,316 otile wire fastending, H. W. Yerlugton 162,451 iox, Ianno chimey, N. Harris. 162,285 ridge, (ron, J. B. Eads. 163,357 ridie bit, A. Buermann 162,316 otile wire fastending, H. W. Yerlugton 162,451 iox, Ianno chimey, S. Hartis. 162,385 ard brake, Laauwe & Winkioop. 162,453 ar brake, I. Barker. 162,337 ar brake, I. Barker. 162,337 ar torake, A. Barker. 162,337 arting envine, S. T. Young. 162,455 arriage axie lubricator, J. M. Witmer. 162,355 arriage inpoly, G. C. Schow. 162,457 artia	Grain scourer, M. D. Beardslee	$\begin{array}{c} 162,213\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,205\\ 162,307\\ 162,307\\ 162,402\\ 162,305\\ 162,307\\ 162,402\\ 162,305\\ 162,2$	Soda water generator. J. Anderson Spinning machine, C. Z. Mattison Spinning ring, W. T. Carroll (r). Stair rod, A. W. Porter Stove and steam heater, cooking T. Pento Stove, cooking, J. It. Hyde (r) Stove, gas, Burnham and Taite Stove, pipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r). Stree tipe shelf, R. D. Farr Stove, reservoir cooking, J. R. Hyde (r). Street sweeping machine, W. M. Blume Sugar, refining, F. O. Matthicssen 162,242, 1 Table, L. Postawka Table, folding, J. Bradfletd Tanning hides, Bartenbach and Richter Tap and faucet for barrels, A. C. Springe Target, C. Buckner, Jr Telegraph wire, insulated, W. Strickler Thill coupling, J. S. Smith. Tobacco package, J. D. Culp Towel, plasterer's, C. Disston Truck, baggage, T. W. Porter Truck, baggage, T. W. Porter Tuck creaser, H. C. Goodrich Tuck markers, H. C. Goodrich Vehicle axie, S. T. Gamwell Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle spring, G. F. Godley Vehicle wheel, J. Curtis Vessel for inflammable liquids, Chase and Vessel, propelling and steering, Dornan Wagon tongue attachment, W. M. Bernha Walls, cramp for hollow, R. Hinvest Wash bench, extension, S. Wishwall (r). Washing machine, J. A. Eberly Washing machine, J. A. Eberly Washing machine, J. M. Hampton Washing machine, J. M. Hampton Washing machine, J. M. Hampton Washing machine, J. M. Hampton Washing machine, J. M. Charu Water choset seat, J. E. Walter Water wheel, T. Kring Water choset, S. Steffany Water choset. S. Steffany Water choset. S. Steffany Water wheel, T. Kring Weil perforating tube, C. L. Travis Window washer, C. fl. Smith. Wood, bending, S. R. Bailey Wrench, H. R. Sloat Yoke, neck, C. R. Moon Window washer, C. H. Suster Window washer, C. H. Sheels, A. 8,276POTERYJ. Coxon, Trenton, N. 8,277CorrER.MCNTSR. Trautmann, 8,282PITCHERH. Vasseur, Wallingfor Nether theore, J. Sweeth, S. Hayden, Els, 4,282PITCHERH.	$\begin{array}{c} 162,246\\ 6,386\\ 6,386\\ 162,416\\ 162,413\\ 162,413\\ 162,150\\ 162,341\\ 162,345\\ 162,344\\ 162,345\\ 162,234\\ 162,234\\ 162,234\\ 162,234\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,213\\ 162,214\\ 162,214\\ 162,202\\ 162,355\\ 162,140\\ r. 162,222\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,355\\ 162,202\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,258\\ 162,350\\ 162,165\\ 162,224\\ 162,350\\ 162,38$	and fuel saver. April 17, 1875. 4,647J. F. Webster, Hamilton, Ont. Screw ma April 17, 1875. 4,649B. Sloper, Montreal, P. Q. Hydrogen gen and carbureter combined. April 17, 1875. 4,669S. R. Balley, Boston, Mass., U. S. Wood ing machine. April 17, 1875. 4,651W. G. Rawbone, Toronto, Ont. Cartridge cf April 20, 1875. 4,652S. H. Hall, Belle Plaine, Iowa, U. S. Ta April 20, 1875. 4,653J. B. Porter, Yarmouth, N. S. Ironing ma April 20, 1875. 4,654E. Hiffany, Bennington, Vt., U. S. Circula ting machine. April 20, 1875. 4,655G. G. Gray-St. John, N. B. Mowing ma April 20, 1875. 4,655S. Rydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875. 4,655S. Rydbeck, Red Wing, Minn., U. S. Mo machine. April 20, 1875. 4,658W. R. Caker et al., Drampion, Ont. Hot ah stove. April 20, 1875. 4,669B. Curtis, Jr., Boston, Mass., U. S. Buck tachment. April 21, 1875. 4,660B. Curtis, Jr., Boston, Mass., U. S. Buck tachment. April 21, 1875. 4,660W. H. Landon. Princeton, Ont. Self-actif coupling. April 21, 1875. 4,662Wm. J. Mansell, Toronto, Ont. Self-actif coupling. April 21, 1875. 4,664W. H. Landon. Princeton, Ont. Parlor c stove. April 21, 1875. 4,664W. H. Landon. Princeton, Ont. Parlor c stove. April 21, 1875. 4,664W. H. Landon. Princeton, Ont. Parlor c stove. April 21, 1875. 4,664W. H. Landon. Princeton, Ont. Parlor c stove. April 21, 1875. 4,664W. H. Landon. Princeton and the store of the south store of the coupling. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21, 1875. 4,664W. J. Wauchope, Niddrie, Scotland et a manufacture. April 21,

