

(24) U. H. says: I want to make a collection of insects. How must I prepare them? Must the box I put them in be airtight? A. The necessary information required by you can be obtained by consulting "Packer's Guide to the Study of Insects," or J. G. Wood's "Insects at Home."

(25) E. H. M. says: Spirits, such as Holland gin and Scotch and Irish whiskey, if allowed to remain in the original cask for 6 or 12 months, becomes tinged or colored from the wood, which deteriorates the market value, perfectly white being the desirable hue. What, if anything, will remove the objectionable color without deteriorating its value? A. The color is an amber tint obtained from the cask, which we were not before aware affected the value of the spirits. The astringent properties are also increased by the same means, but we know of no method to make the liquor colorless, except re-distillation.

(26) M. F. M. asks: Is there any instrument wherein the magnetic needle is replaced by other means, equally effective and not subject to local attraction? A. No.

(27) J. J. S. asks: Can I use a portable engine, of a small size, for heating a store room 30 feet square by steam, and also run the engine for half an hour per day? A. The boiler of a portable engine is not usually very efficient, except with the forced draft due to the blast. A boiler made especially for heating purposes would probably answer better. Subscriptions to the SCIENTIFIC AMERICAN are received every day in the year.

(28) I. T. H. asks: Will the United States government register foreign built iron or wooden ships? Are there any lines of ships (trading to England) built in England, owned in America by Americans, and registered in America? A. No foreign built vessel can be registered in the United States. There are some steamship lines that are largely owned in this country, but the vessels sail under a foreign flag.

(29) J. asks: How can I build an ice house to hold eight tons of ice? A. Erect a building above ground 17 feet square on the exterior; make an interior compartment in the center of the same 6 feet square on the inside thereof; make both the interior and exterior walls 12 inches thick, by setting up 2 by 10 inch studs, about 2 feet apart in the interior walls and 3 feet apart in those of the exterior, and then cover the exterior and interior of each wall with one inch boards with tight joints, if tongued and grooved so much the better. The outside frame will require a foundation 3 feet deep in the ground; therefore excavate the interior and make the floor of the ice house say 2 1/2 feet below the surface of the ground. Make the height on the interior 8 feet in the clear above said floor, and construct a strong level ceiling of boards secured to proper cross bearers. Then fill in the two frames with dry saw dust between the interior and exterior boarding, and lay similar filling upon the ceiling boards to a height of 12 inches. Pave the floor with cement concrete graded lowest at the center, and provide a good drain to carry off the water. Put a high pitched ordinary roof over the ceiling, and provide a tube from ceiling to exterior of roof for ventilation of interior of ice room. Make exterior and interior doors in these walls, lined with canvas and filled with sawdust. Fill the interior chamber with the ice, laid upon a few rails to keep it from the bottom, packing close in very cold weather, and throw water upon it occasionally to freeze it together. You will then have a cube of ice of 7 feet, which will contain something more than 8 tons, and which will have the protection of a 3 feet air chamber or passage all around it. This 3 feet chamber will be your cold closet, in which you can preserve your meats etc., in summer, care being taken to have the door to it opened as little as possible. This also answers E. S.

(30) J. A. H. asks: What will save clothing from moths better than gum camphor or cedar wood? A. There is nothing better.

What will remove (without injury to the skin) the small worms or black heads in a person's face? A. "The treatment requires the employment of such means as are calculated to stimulate the skin gently, and excite it to the due performance of its proper functions. The parts affected should be saturated with soap and thoroughly washed; they should then be rubbed briskly with a rough towel, until the skin be felt to glow, and this should be repeated twice in the day. The immediate effect of this treatment may possibly be a red and patchy state of the skin, which will speedily pass away. It would be well also to extend the ablutions and frictions to the entire body, for the appearance of the disease in one part is indicative of a generally torpid action of the skin. Cold bathing and sea bathing are beneficial. In severe cases, bichloride of mercury in an emulsion of bitter almonds has been used.—Wilson "On Skin Diseases."

(31) A. L. D. asks: Is chronic nasal catarrh curable? A. Sometimes it is cured. Consult Niemeyer's "Practical Medicine," vol. 1, pp. 286-292.

(32) A. P. asks: How can I look at the sun with a common spy glass without hurting the eye? A. Place a disk of dark or smoked glass between two paper rings inside the eyepiece cap.

(33) C. A. S. asks: What kind of machine shop should I go into in order to become a master mechanic? Ought I to go to college first? A. Go to the one that does the greatest variety of work. Very few master mechanics, we imagine, have been through college.

(34) V. A. asks: Is the moon's orbit round the earth in the same plane as the orbit of the earth round the sun; and if not, what is its greatest divergence, expressed in degrees? A. The moon's orbit is inclined to the ecliptic 5° 8' 48". 2. I have heard it asserted that the moon shines with great brilliancy during the arctic winters, but fail to account for it otherwise than by a departure of at least twenty degrees in the lunar orbit from the plane of that of the earth. A. The moon's greatest distance is 253,263 miles, least 231,436, mean 233,885. The polar winter alternates with a fortnight of moonlight and a fortnight of darkness for six months.

(35) J. C. H. asks: What is the best non-conductor for filling the walls of a refrigerator? A. Air, probably.

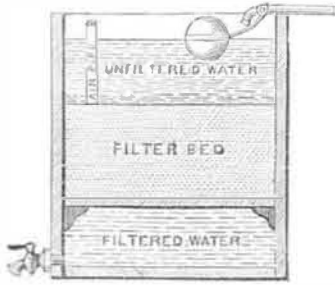
(36) E. L. M. asks: How is spermaceti purified? A. This substance occurs mixed with oil, filling large cavities in the head of the sperm whale. The oil is removed by pressure, and finally by washing in a dilute solution of potassa, and the spermaceti is obtained as a white solid, which fuses at 120° and crystallizes on cooling, in beautiful, broad, pearly plates.

(37) J. M. asks: What do actual and nominal horse power of a steam engine mean? A. Nominal horse power is calculated from assumed conditions, generally very different from the real conditions, upon which the actual horse power depends.

(38) A. B. C. asks: Is there a book that gives instructions on casting toys, figures, etc., in plaster of Paris? A. We do not know of any such work.

What is Parian marble? A. Parian marble is an unglazed statuary porcelain, similar to English porcelain, but more difficultly fusible, containing less flux and more silica. The color is a very slight yellow; the surface is waxlike.

(39) G. T. O. says: I ask your opinion in regard to the construction of a water filter, and would like to know the best possible form. I want one that will hold about 3 gallons. What shall I put in it, and how shall I place it? A. The engraving represents a very good filtering apparatus, manufactured in Eng-



land; you can have one like this made of any desirable size. The best material for the box would be soapstone; the next best material, iron. Mott's cast iron tank plates come of a convenient size—18x18 inches and 9x18 inches—these may be galvanized or coated with slate paint. But Passaic water cannot be purified by filtering alone; the following (which we wrote in 1866 in answer to a correspondent in reference to the water supplied to Philadelphia) will also apply in this case: "If our correspondent is willing to take the trouble, he may obtain pure water by distilling, filtering, and aerating. Get a simple still to set on a cooking stove, and distill all the water intended for drinking, then filter it through freshly burned charcoal to remove the volatile odors that come over, and finally agitate it in the atmosphere so that it may reabsorb its supply of air to make it sparkling and palatable. A simpler process for obtaining pure water is to melt ice. This process is employed by some of the most eminent physicians in this city for their own families, to avoid the danger of lead poison from their water pipes."

(40) J. S. B. asks: Can nitric acid of a specific gravity of 1.94 be made, and would it be anything short of anhydrous nitric acid? Books of reference place the specific gravity, obtained by evaporating the acid to its greatest density, at 1.521. A. To our knowledge there is no nitric acid of so high a specific gravity used either in the arts or the laboratory.

(41) B. A. S. says: I wish to make a telescope of four joints. How long should each joint be, and what sized lens shall I put in, to see at the distance of 15 or 17 miles? What kind of material should it be made of? My object lens will be about 2 1/2 inches. A. You will need a foot lathe with traversing mandrel, in order to chase screw threads properly in thin brass tubes. See previous answers to correspondents for construction of eyepieces.

(42) A. D. C. B. says: 1. A friend of mine says that whisky can be made without being distilled? Is this so? A. Yes. 2. Is it more unwholesome than the other sorts? A. No. All are equally deleterious.

(43) D. McD. says: I send you a plan for the multiplication of the effects of two or more air-pumps, founded on the theory that if an air pump that will exhaust a receiver to 1-100 of the density of common air be placed under a receiver, already similarly exhausted, the smaller receiver will equal 1-10,000 the density of the common air. A. We do not see that any advantage is obtained by this multiplicity of pumps.

(44) S. says: A segmental brick arched bridge of 27 feet span by 8 1/2 feet rise is about to be erected over a creek at Poughkeepsie, N. Y.; it crosses the same at an angle of 52° 10', making the distance on the skew about 34 feet. Do you know of any brick or stone bridges placed at or near the above angle to be built in horizontal courses or as you would build a rectangular bridge? Is it possible to build one in horizontal courses at that angle with any certainty of the arch sustaining itself for an indefinite period? A. We do not know of any skew bridges built in horizontal courses, nor is it desirable to so build them, as such construction is unscientific and without guaranty of permanence. Edward Dobson, C. E., in his "Treatise on Masonry and Stone Cutting," published by Weale, has exemplified fully the nature of the twist required in such arches. A brick arch, when oblique, as you require, would be best built by laying the courses at right angles to the sides of the centering, depending upon the latter entirely for the shape of the soffit; the strains would then be properly received upon the abutments, and the bridge would be secure.

(45) J. P. & Co. ask: What cement will do to fill a corn burr? A. Try a mixture of dust from powdered French burr stone, alum, and water. Back up the stone with plaster of Paris. Your cheapest plan, however, may be to send the stone to a manufacturer to be repaired.

(46) A. R. asks: Will coal tar applied to fence posts before setting render them much more durable? A. Yes. It will render them insect and damp proof. It should be laid on hot.

(47) L. M. says: I have a hop vine which climbs around the pole from east to west; and near by are pole beans which turn from west to east. What is the cause of the difference? A. It is a principle of plant life for plants to wind themselves upon the first means of support, the manner of which is dependent upon no known law.

Is there anything that I can use to get coalmarks off my face? A. We know of no preparation especially adapted for that purpose.

What do the terms "specific gravity" and "equivalent" mean? A. Look in Webster's "Dictionary."

(48) A. F. C. says: I have a 3 inch achromatic object glass of 48 inches focus, and am desirous of constructing a celestial eyepiece of as high a power as it will stand for use in a telescope. How must I arrange it? A. Rule for Huyghenian eyepiece of any power: Divide the focal length of object glass by the power required. Quotient doubled = focus of field lens. One third of focus of field lens = focus of eye lens. The two lenses are separated two thirds the focus of field lens. Both should be plano-convex, with curved side toward objective. Eye lens should be about half the diameter of field lens. A diaphragm is placed at the focus of the eye lens. Your previous enquiry was answered on August 1.

(49) H. B. C. asks: What food gives the most nutriment to the brain? A. No one material can be considered best; that suiting at one time may not at another. That food is best for the brain which is best for the body, producing mens sana in corpore sano.

If heavy cannonading causes rainfall, what is the operation of it? A. It has been proved an absurdity.

Is the expression "the cold is too great for snow" true or not? A. The expression is not true, some of the heaviest snowstorms in this latitude having taken place in the very coldest weather.

(50) W. G. L. says: We are building a press; the crank shaft is 6 inches in diameter, with crank in the middle of it of 4 inches throw. Our foreman says the key seat for the driving wheel or pinion on the shaft should be upon the same side of the shaft with the crank, as it would give advantage of leverage and less stress upon the key. I think it makes no difference. Who is right? A. It makes no difference where the key is. The key seat, however, is generally cut in such position as is most convenient to chuck the shaft to cut the key seat.

(51) J. J. S. asks: What book would you recommend for the use of a machinist, possessing an ordinary common school education? I wish to study the use of steam, especially applied to marine engines. A. Get Bourne's "Catechism" and "Recent Improvements of the Steam Engine," and Wilson's "Treatise on Boilers."

(52) G. B. Q. says: I append the principal dimensions of two pairs of compound surface condensing engines, which I will call No. 1 and No. 2. Engine No. 1 is rightly proportioned, and engine No. 2 is to be built in the same proportions, with a reduction of 3 inches in diameter of high pressure cylinder, and a reduction of 6 inches in low pressure cylinder, and of 4 inches in the stroke; but it is to carry higher steam. Should all the parts of No. 2 be reduced in proportion as the cylinders are reduced, and do you consider the surface condenser for No. 2 sufficient in proportion to No. 1, the steam being condensed on outside of tubes in condenser of No. 1, and on inside of tubes in condenser of No. 2? No. 1 has the advantage of sea water at a much lower temperature, while No. 2 has river water for condenser, the difference being about 5° higher in the river.

Table with 2 columns: Engine No. 1 and Engine No. 2. Rows include Diam. of high pressure cylinder, Diam. of low pressure cylinder, Length of stroke, Revolutions, Tubes in surface condenser, Length of each tube in surface condenser, Diameter of tubes outside, Pressure of steam per square inch, Steam cut-off.

A. From simple examination, we should say that the proportions of No. 2 condenser are rather small, if No. 1 is just right. We think, however, that the proportions of No. 1 engine could be improved. Of course, if you think of building an engine of this size, you should entrust the design to a competent engineer.

(53) W. S. asks: What will best cement glass, so as to stand blood heat? A. Try diamond cement.

(54) H. C. N. F. and F. G. H. call attention to an error in our answer No. 28, p. 202, current volume. The speed of the boat down stream should of course be 16 miles per hour.

(55) C. I. asks: Why is not the power of air utilized? Is it not preferable to steam, cheaper, and safer? A. Air engines of any considerable power, as at present constructed, are very bulky. Why is not electricity used as a motor? A. It is too expensive to compete with steam, on a large scale. What has become of the one rail project for railroads? A. The inventor is, by last advices, trying to introduce this system in the South.

(56) A. F. L. W. asks: 1. How can I tell a high from a low pressure engine? A. As these terms are ordinarily used, a low pressure engine has a condenser, and a high pressure engine exhausts into the air. 2. How can I tell the horse power of any engine? A. It can only be ascertained with perfect accuracy by means of experiments. We have frequently given rules for its approximate determination.

(57) C. F. T. asks: How hot can water be heated? A. When the barometer indicates 30 inches, boiling point of water is 212° Fah. But as the pressure decreases, the boiling point of water is proportionately lower, and vice versa. Which will freeze in the shortest time, hot or cold water, when both have been boiled? A. Cold water.

(58) W. L. asks: A friend and I had a dispute on the cause of the different seasons. He says that they are caused by an eccentric motion of the earth, and I claim that they are caused by the axis of the earth being inclined 23 1/2° out of perpendicular. Who is right? A. You are right.

(59) E. B. W. asks: Into how many orders are the various curves divided, and upon what principle is the division made? Do the conic sections constitute a distinct order? What curves belong to each of the various orders? A. You will find this matter discussed in any good text book of analytical geometry. It would occupy too much space, and is too strictly mathematical to justify its consideration in these columns.

(60) R. O. B. asks: Who saved the Great Eastern during her first outward voyage? A. Mr. Hamilton E. Towle recovered a claim against the company for his exertions on the occasion of the disaster to the Great Eastern.

What is the best work on geometrical drawings? Is Rhein's book a good one? A. Professor Warren's and Minifie's books are good.

Can one of ordinary ability acquire sufficient knowledge of drawing in 6 months to be able to enter a drafting room? A. Yes, in a humble position at first.

Is there a rule by which a person can find the radius when the arc and chord are given? A. We know of none.

(61) A. R. asks: What machinery is needed to propel a boat by electro-magnetic action? A. There is no such machinery in the market. If you write to a maker of philosophical apparatus, or advertise, you may possibly be able to have a machine constructed.

(62) J. P. P. asks: Where can I get drawings of engines, low and high pressure and compound, with the details in full? A. N. P. Bergh's work on the marine engine, with appendix on compound engines, gives details of many English engines. Weissenborn's works give details of American engines, condensing and non-condensing, but not of compound engines.

(63) J. S. P. asks: What is the best mode or manner of improving the acoustics of public buildings, checking the echoes, etc.? Are wires the best remedy? If so, of what size, and how far apart should they be, in a room 79x50 feet, with a ceiling 19 feet overhead. There are 21 feet of rising seats and no pulpit; the speaker stands upon the floor. The sound of his voice echoes and reverberates to that extent that it is extremely difficult to understand a word he says. What is the scientific remedy? A. Try the wires on the vertical wall opposite the speaker; place them to run horizontally 6 inches out from the wall and 6 inches apart. If this does not sufficiently break the force of the echo, place a similar series in the two side walls extending from the back of the church where the speaker stands to the center of the depth of the building. Your ceiling is entirely too low for so large a room.

(64) W. C. says: I have a cistern in which the water smells so badly that it is impossible to wash with it or to use it in any way. My house is surrounded by water maple and horse chestnut trees. The cistern has lately been thoroughly cleaned, and has also had a bushel of charcoal put into it. A flat stone has usually covered the mouth of it, making it airtight to a certain extent; I have had the stone removed entirely, but still the water is unfit for use. Can you give me any remedy for the trouble? A. Are you sure that there is no drain that runs near it or leaks into it, or a defective cover or crown that admits of the drainage of surface water into it? Are your roofs clean and covered with the usual material? Is there an overflow pipe, and may not surface water enter by some break and obstruction in that? These points you ought to be sure of; because, if you have a clean, tight cistern properly ventilated, you ought to have good water.

(65) J. A. C. asks: In a steam hammer, what would be the diameter and stroke of cylinder, and the weight of hammer on end of piston rod, for ordinary ship work? Could I elevate the hammer by a spring pole, and use steam on top only? A. Cylinder 4 inches diameter and 12 inches stroke. Weight of hammer, 250 lbs. It would be best to raise the hammer by steam.

(66) C. W. McC.—Try a weak solution of ammonia.

(67) P. F. D. asks: How is the dull black, used for optical instruments, made? A. Dissolve a drachm bichloride of platinum in one ounce of water and add a grain nitrate of silver. Clean, polish, and warm the brass. Apply the solution with cotton wool rubbing until dry.

(68) G. W. C. says: I would like to ask H. L. M. how he could straighten a rifle barrel from the outside: if the bore was not in the center? Rifle barrels are usually welded up from a flat bar with a small hole in the center, or as near the center as can be but never exactly in it. After a barrel is forged, bored, and polished, it is straightened from the inside (not outside) then a circle is struck on each end, and it is finished from those circles from end to end. Before a barrel is straightened the bore has many short crooks, some not over 3 inches long, and perhaps some less. Those crooks cannot be taken out with the wooden blocks and vise that H. L. M. tells I. G. N. to use. A rifle barrel, to shoot correctly, must be perfect for a foot at the muzzle, but it is not so important for the balance of the way. It is not absolutely necessary to have a shot gun barrel perfectly straight to make a good shooter. There is more difficulty to make a good shot gun than a good rifle. The best of gunsmiths cannot make a good shot gun every time, and they cannot tell what the trouble is.

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

A. K.—No mineral has been received under this name.—C. I.—Only one parasite was found in the box. By use of the microscope, it was found to resemble a common red scale bug, devoid of legs; but whether these were wanting naturally or were broken off, we cannot say. No description could be found to agree with it, and possibly it is unknown. The contents of the box were in a very poor condition when received. When Kansas and the adjacent States and Territories become as thickly settled as the Eastern States, there will be no more danger of locusts there than here.—W. A. S.—The plant or vine sent by you is the climbing wild hemp (mikania scandens), very common in the middle portion of the Southern States. We know of no law or rule for the direction of the spiral of a climbing plant.

N. S. asks: How can I put solder up in small bars, the size of a knitting needle, without molds?—A. D. asks: How can I make soda water?—O. C. H. says: I have a lot of shingles, with sap that turns blue, black, and green after a little exposure to the weather. How can I prevent this?—F. S. asks: How can I make black ink powder?

COMMUNICATIONS RECEIVED.

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

- On Aniline Black. By M. B. C. G.
On the Texan Stinging Lizard. By T. L. W.
On Type Setting Machines. By —
On the Recent Rifle Match. By —
On a Nut for Mr. Darwin. By J. B. H.
On Cross Cut Saws. By A. H. I.

Also enquiries and answers from the following:

J. W.—F. L. Y.—W. S.—J. S. H.—R. L.—H. H.—C. B. A.—C. D. Q.

HINTS TO CORRESPONDENTS.

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

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



Hundreds of enquiries analogous to the following are sent: "Who sells the Leeds heater? Where is the cheapest and best shop to get small metallic articles manufactured? Who buys gold, silver, or copper coins? Who publishes books on tanning? Where can artesian well machinery be obtained? Where can I purchase a good horse power well drill? All such personal enquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

[OFFICIAL.]

Index of Inventions

FOR WHICH

Letters Patent of the United States

WERE GRANTED IN THE WEEK ENDING

September 15, 1874,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing various inventions and their patent numbers, including items like Alarm, grist, G. H. Eastman, Axle boxes, die for making, W. S. Ward, Bale tie, cotton, O. B. & E. C. Woodbury, Barrels, dressing and crozing, A. Wirthlin, Bee hive, T. & G. W. Robinson, Binder, temporary, W. H. Bennett, Boat, steam canal, W. & W. Baxter, Jr., Boats, propelling, W. H. Holdam, Boiler, T. W. Weathered, Boiler feeder, P. T. Brownell, Boiler, steam, J. L. Knowlton, Boiler tubes, cleaning, W. S. Von Essen, Book case partition, J. P. Adams, Book holder, Furr & Knaus, Boot and shoe heel, M. H. Prescott (r), Boots, forming stiffeners for, L. Coté, Boots, etc., jack for beating-out, C. W. Collyer, Boring machinery, earth, W. H. Salyer, Brick machine, J. Goodman, Bucket ear, A. Sperry, Car axle box, J. Johann, Car brake, atmospheric, Steel et al., Car brake, railway, L. T. Pyott, Car coupling, C. L. Herack, Car coupling, M. Jarrett, Car doors, operating, J. Stephenson, Car spring, A. Bridges (r), Car starter, G. Turner, Carbureter, J. McHenry, Card, game, P. West, Carriage, Thompson & Grier, Carriage and wagon brake, W. H. H. Snellbaker, Carriage seat, child's, C. E. Fritsche, Carriage step, Keene & Sawyer, Chair, opera, J. Richardson, Chairs, foot rest for, M. Eberhard, Chandler, drop light, Buck & Clock, Check rod cords, joint for, L. L. Haworth, Churn, H. G. Hall, Cigar making machine, F. Haebnel, Clay retorts, making, W. D. Cliff, Cloth, shrinking and drying, W. Robertson, Coal chute, J. W. Upson, Cock, gage, J. Smith, Coffee cleaner and grader, J. Arbuckle, Jr., Cooler, beer, G. Braudes, Corn sheller, A. H. Shreffler, Current wheel, M. McCarty, Cutter head, M. Montgomery, Cutter stock, manufacture of, A. M. Howe, Desk, J. D. Mertimer, Dog, sliding, J. Slawson, Drawing protractor, etc., S. M. York, Drilling coal, machine for, J. F. Taylor, Edging machine, Nichols & Young, Eatble compound or apple honey, L. Hurd, Effervescent liquids, drawing, F. W. Wiesebroek, Engine and motor, water, S. Wilmarth, Engine, electro-magnetic, Basset & Gaume, Engine, hot air, J. Hirsch, Engine, rotary, Gibson & Cheney, Engine, compound condensing, J. Houpt, Eyelet making machine, J. D. Robinson, Fair box, C. M. Coolidge, Feather duster, G. W. Hibbard, Fence, flood, A. C. Burner, Fertilizer distributor, etc., M. Cooper, Fertilizing machine, Dexter & Pond, Fire arms, breech-loading, L. C. Rodier, Fire arm, revolving, W. Mason, Fork, horse hay, E. Harrison, Furnace for roasting ores, S. M. Wessels, Gage, iron ship builders', J. McPhail, Game apparatus, G. H. Ireland, Gate, automatic, H. P. Haskins, Gate, automatic, J. A. Treat, Gate, automatic, J. Weathers, Gate, farm, J. S. Hughes, Gear-cutting machine, G. M. Holmes, Generator, carbonic acid gas, H. Pietsch, Glove fastening, J. F. Field, Grain binder, J. H. Morse, Grain binder, J. L. & W. Skelly, Grooving machine, A. Davis, Harness findings, M. E. Zeller, Harrow, M. McNitt, Harvester, corn, R. B. Robbins, Harvester rake, P. C. Pagett, Hatchway, self-closing, L. R. Barbour, Hinge, L. L. Hall, Hinge for gates, etc., spring, C. A. Warren, Hinge for safe doors, etc., H. B. Tripp, Hook, check, J. Thornton, Horse power, R. Ball, Horse power, J. S. Schofield, Horse protector, R. P. Lawton, Rose anchor, J. B. Farrier, Rose nozzle, Gasset & Belsier, Indicator, station, H. Shaw, Jack, lifting, J. O. Joyce, Jack, lifting, N. Schwagel, Lantern, kaleidoscopic, F. Hartmann, Lath machine for sawing, T. N. Egery, Letter box, P. Acquadro

Table listing various inventions and their patent numbers, including items like Lime, preserving, W. S. Sampson, Lock for doors of jail cells, P. J. Pauly, Loom for weaving hair cloth, J. Turple, Measuring distances, J. B. Thomas, Millstones, dressing, Johnson & Terry, Millstones, dressing, W. P. Uhlinger, Mitering machine, S. Williams, Music leaf turner, Cohen & Dietz, Musical instrument insulator, W. R. Miller, Nozzle, C. G. Wheeler, Oar lock, G. L. Stack, Ore roaster, revolving, R. Teats, Packing for pistons, W. Adair, Pan forming sheet metal, W. A. Bacon, Paper bags, making, E. J. Howlett (r), Paper pulp regulator, R. Hutton, Paper pulp, cutting wood for, T. N. Egery, Pavement, cobble stone, P. Zadig, Pen, R. H. Chinn, Pen and pencil case, R. M. Collard, Pencil sharpener, J. S. Hall, Picture frames, mat for, H. S. Hale, Pile cutter, I. E. White, Pipe joint, P. Ball (r), Pipes, cast iron, W. Smith, Planter, corn, F. M. Siders, Planter, corn and pumpkin, Jones & Frantz, Plow, carriage, S. B. Peugh, Plow for covering corn, W. H. Grant, Plow, wheel, C. B. Stevens, Pocket attachment, safety, E. Carter, Press, box-packing, G. W. Soule, Press, cotton, J. T. Burr, Press for making tin can tops, J. S. Merriken, Press, tobacco, J. M. Gaston, Propeller, screw, P. M. Blatchley, Pruning implement, W. Millspeugh, Pump, S. C. Midlam, Punching sheets of metal, T. H. Drury, Raft, life, B. Almonte, Railway rail and roll, J. M. Connel, Railway switch, street, A. L. Johnson, Railways, removing snow from, R. A. Shinn, Railways, removing snow from, J. Mullaly, Rake, horse hay, H. Myers, Refrigerator, W. Cleveland, Roofing, metallic, M. Wiles, Sash holder, H. A. Blake, Sash holder, F. E. Brown, Sash holder, P. G. Wright, Saw set, O. Newton (r), Sawing laths, machine for, T. N. Egery, Scaffold, French & McFadden, Seed dropper, C. W. Hauke, Seeding machine, S. G. Randall (r), Separator, grain, F. M. Fish, Settee, folding, J. G. Bliss, Sewing machine, R. H. St. John, Sewing machine treadle, R. F. Wilcox, Shaft coupling, S. Stuart, Shaftings, bearing for upright, B. E. Orton, Shoe-brushing machine, M. Simon, Skate, R. H. Earle, Skirts, machine for printing, H. J. Davies, Spinning wheel, W. B. Walker, Squares, lining carpenter's, C. S. Bement, Stair rod, H. Iversen, Steering wheels, brake for, J. P. Gelsler, Stove, heating, A. Wheeler, Stoves, safety water back for, J. E. Robinson, Sugar mold, G. B. Ockershausen, Table for clothes cutting, G. R. Eager, Testing machine, R. H. Thurston, Tobacco pipe, J. Mackintosh, Tobacco press, J. M. Gaston, Towel rack, R. B. Taylor, Track cleaner, T. C. Churchman, Transplanter, N. McLeon, Trestle, folding and extension, H. K. Stevens, Truss, hernial, N. Jones, Umbrella up holder, D. Elkan, Valve, H. D. Lockwood, Vehicle running gear, D. Gibbens, Vehicle wheel, W. C. Johnson, Vehicles, neck yoke for, L. Biddle, Vessels, plating for, J. McLaughlin, Watch regulator, F. Keeping, Watch, stem-winding, McNaughton et al., Watches, wheel escapement for, W. G. Schoof, Water wheel, turbine, J. E. Safford, Water wheels, preventing freezing, H. S. Akins, Weather strip, W. D. Knox, Well, petroleum, E. M. Stevenson, Wheelbarrow, J. G. Harrison, Window screen frame clasp, J. W. D. and H. Kelley, Wire cables, machine for cleaning, R. Cotter, Wood-planing machine, A. Davis, Yoke, neck, W. A. Lloyd

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter mentioned: 30,910.—PAPER FOLDER.—C. Chambers, Jr. Dec. 2. 30,955.—CUTTING BUTTON HOLES.—F. C. Leopold. Dec. 2. 30,929.—TOBACCO CUTTER.—W. H. Pease. Dec. 2. 30,931.—SPINNING FRAME CYLINDER.—R. Plews. Dec. 2. 30,945.—VEGETABLE PARCUMENT.—X. Kacheski. Dec. 2. 30,993.—WOOD PLANING MACHINE.—H. D. Stever. Dec. 2.

EXTENSION GRANTED

30,076.—WOOD SAW FRAME.—W. H. Livingston.

DISCLAIMER.

30,076.—WOOD SAW FRAME.—W. H. Livingston.

DESIGNS PATENTED.

Table listing various designs and their patent numbers, including items like Ornamenting glass, W. Beck, Pittsburgh, Pa., Car wheel, W. A. Miles, Copake Iron Works, N. Y., Burial casket, G. M. Rinehart, Allegheny, Pa., Table glass, L. Stoehr, Pittsburgh, Pa., Spoon handles, G. W. Hull, Wallingford, Conn., Harness rosette, F. Reynolds et al., Newark, N. J., Grocer's can, C. C. Warren, Toledo, O., Omnibus, A. Wright, St. Louis, Mo.

TRADE MARKS REGISTERED.

1,978.—CATARRH REMEDY.—N. S. Coon, San Francisco, Cal. 1,979.—CANNED FRUIT, ETC.—G. M. Howell, Trenton, N. J. 1,990.—SUGAR.—Matthiessen & Wiechers Refining Co., Jersey City, N. J. 1,981 & 1,982.—BREAST PUMPS.—O. H. Needham, N. Y. city. 1,983.—GLOVES.—Virbel et al., New York city. 1,984.—ARATED BEVERAGE.—J. R. Champlin, Laconia, N. H. 1,985.—INSECT POWDER.—H. S. Danziger, New York city. 1,987.—TIMBER, ETC.—H. A. Frink, Baltimore, Md. 1,987.—CIGARS.—J. W. McCarthy, Independence, Iowa. 1,988.—BOOTS, ETC.—Phipps & Co., Cincinnati, O. 19,89.—STEAM INJECTOR.—Rue Manf. Co., Philadelphia, Pa.

SCHEDULE OF PATENT FEES. On each caveat \$10. On each Trade Mark \$25. On filing each application for a Patent (17 years) \$15. On issuing each original Patent \$30. On appeal to Examiners-in-Chief \$10. On appeal to Commissioner of Patents \$20. On application for Reissue \$30. On application for Extension of Patent \$50. On granting the Extension \$50. On filing a Disclaimer \$10. On an application for Design (3 1/2 years) \$10. On application for Design (7 years) \$15. On application for Design (14 years) \$30.

CANADIAN PATENTS.

LIST OF PATENTS GRANTED IN CANADA

SEPTEMBER 21 to 25, 1874.

Table listing various Canadian patents and their numbers, including items like W. G. Entekin, Philadelphia, Philadelphia county, Pa., U. S. Improvements in machine for burnishing photographs, called "Machine for Burnishing Photographs," Sept. 21, 1874. J. T. Waring, Yonkers, Westchester county, N. Y., U. S. Improvement in the treatment of felted, woven, and spun fabrics, called "Waring's Improved Treatment of Felted, Woven, and Spun Fabrics," Sept. 21, 1874. J. H. L. Wilson, Sherbrooke, P. Q. Improvements on crib attachments to bedsteads, called "Wilson's Crib Attachment for Bedsteads," Sept. 21, 1874. D. Dodge, Keeseville, Essex county, N. Y., U. S. Improvements on machine for cold-finishing horse shoe and other nails, called "Dodge's Cold-Finishing Nail Machine," Sept. 21, 1874. W. A. Springer, Marlborough, Middlesex county, U. S. Improvements on trimming or cutting attachments for sewing machines, called "Springer's Trimming or Cutting Attachments for Sewing Machines," Sept. 21, 1874. W. H. Bowers, Franklin, Simpson county, Ky., U. S. Improvements on apparatus for propelling street cars by compressed air, called "Bowers' Apparatus for Propelling Street Cars," Sept. 21, 1874. J. L. Clark and J. Stanfield, 5 Westminster Chambers, Victoria street, Westminster, Eng. Improvements on floating docks and pontoons, called "Clark & Stanfield's Improved Floating Dock," Sept. 21, 1874. T. P. Ford, Brooklyn, Kings county, N. Y., U. S. Improvements on ships' berths, called "Ford's Self-Balanced Berth," Sept. 21, 1874. M. L. Barclay, township of Williamsburgh, Dundas county, Ont. Improvements on washing machines, called "Barclay's Washer," Sept. 21, 1874. J. R. Whitmore, Chicopee, Hampden county, Mass., U. S. Improvements on horse hay rakes, called "Whitmore's Horse Hay Rake," Sept. 21, 1874. D. Rousseau and W. C. Smith, New York city, U. S. Improvement on electric signals and signal lamp locks, called "Rousseau's Improved Electric Railway Signal," Sept. 21, 1874. J. Lawrence, Palermo, Halton county, Ont. Improvement in reaping and mowing machines, called "Lawrence's Improved Shoe for Reapers and Mowers," Sept. 21, 1874. W. C. Stone, Almonte, Lanark county, Ont. Improvements on brush dusters, called "Stone's Duster," Sept. 21, 1874. E. F. Walker, Sherbrooke, P. Q. Improvements on gridirons, called "Walker's Dominion Double Gridiron," Sept. 21, 1874. O. W. Taft, New York city, U. S. Improvements on steels for sharpening knives, called "Taft's Steel for Sharpening Knives," Sept. 21, 1874. W. Foulis, Glasgow, Lanark county, Scotland. Improvements on machinery for charging retorts, called "Foulis' Retort Charging Apparatus," Sept. 21, 1874. G. S. Walker, Erie, Erie county, Pa., U. S. Improvements on washing machines, called "Walker's Washing Machine," Sept. 21, 1874. C. C. Gregory, Fredericton, New Brunswick. Improvements on exhaust regulators, called "Gregory's Exhaust Regulator," Sept. 21, 1874. J. N. Lander, Concord, N. H., U. S., assignee of T. M. Farrington, same place. Mechanism for raising and revolving the driving wheels of a locomotive steam engine, called "Farrington's Locomotive Eccentric and Valve Adjuster," Sept. 21, 1874. H. G. McMicken, Winnipeg, Mass., U. S. Improvements on a machine for breaking ice, called "McMicken's Improved Ice Pick," Sept. 21, 1874. C. H. Farley, Portland, Cumberland county, Me., U. S. Improvements on locomotive fire boxes, called "Farley's Locomotive Fire Box," Sept. 21, 1874. S. Hoyt, Magog, Stanstead county, P. Q., assignee of S. Rexford, same place. Improvements on stagings, called "Rexford's Improved Staging," Sept. 21, 1874. J. Inglis, Montreal, Montreal District, P. Q. Improvements on weighing scales, called "The Compensating Compound Beam Scale," Sept. 21, 1874. H. Pryor, Woodstock, Oxford county, Ont. Improvements in milk cans, called "Pryor's Improved Milk Can," Sept. 21, 1874. M. A. Goldstone, Toronto, Ont., assignee of T. Mepham, same place. A compound or composition of matter for cleansing or purging boilers from the coating or scale which collects on the inside thereof, called "The Britannia Scale Purgative," Sept. 21, 1874. J. E. Landers, New Bedford, Bristol county, Mass., U. S. Improvement in flower pots, called "Improvements in Flower Pots," Sept. 21, 1874. C. C. Wolcott and W. W. Wood, Washington, D. C., U. S. Improvements on generating and applying Motive Power, called "Wolcott's Motive Power," Sept. 21, 1874. G. J. Baker, Oakville, Hatton county, Ont. "Baker's Dominion Carriage Rub Iron" (Extension of No. 16.) Sept. 21, 1874. O. T. Shafer, London, Middlesex county, Ont. Improvements on land rollers, called "Shafer's Improved Land Roller," Sept. 21, 1874. G. Scott, Montreal, P. Q. Improvements on a clothesline puller and fastener, called "Scott's Clothes Line Lock Pulley," Sept. 21, 1874. J. P. MacLean, Brooklyn, Kings county, N. Y., U. S. Improvements on clasps for uniting the fronts of corsets, corselets, or stays, called "MacLean's Improved Corset Clasp," Sept. 21, 1874. D. Lockhead, Hochelaga, Hochelaga county, P. Q. Improvements on mowing machines, reaping machines, and combined mowing and reaping machines, called "Lockhead's Combined Mowing and Reaping Machine," Sept. 21, 1874. T. Haynes, Kansas, Jackson county, Mo., U. S. Improvement on lubricators for railway car and other axles and journals of shafts, called "Thomas Haynes' Lubricating Oil Box," Sept. 21, 1875.

Table listing various patents and their numbers, including items like J. L. Sprague, Hermans township, St. Lawrence county, N. Y., U. S. Improvements on churns, called "Sprague's Churn," Sept. 25, 1874. H. Wellington, New York city, U. S. Improvements in hydrocarbon burners, called "Wellington's Coronet Burner," Sept. 25, 1874. J. Currie, St. Thomas, Elgin county, Ont. Improvements on gang plows, called "Currie's Improved Wooden Frame Gang Plow," Sept. 25, 1874. H. Carter, Malahide, Elgin county, Ont. "Carter's Improved Ditching Machine," (Extension of No. 89.) Sept. 25, 1874. E. Lavigne, Quebec, P. Q. "Une balanceiro independante," (A swing. Extension of No. 87.) Sept. 25, 1874. A. Kenedy, East Zorra, Oxford county, Ont. "Kenedy's Flexible Roller," (Extension of No. 26.) Sept. 25, 1874. B. F. Ulmer, Savannah, Chatham county, Ga., U. S. Improvements on a medical compound, called "Dr. Ulmer's Liver Corrector or Vegetable Aperient," Sept. 25, 1874. I. Gordon, St. Catharines, Lincoln county, Ont. Improvements in a machine for grading and separating wheat, called "Gordon's Combined Wheat Grading and Separating Machine," Sept. 25, 1874. G. Smith, Clinton township, Lincoln county, Ont. Improvements on a machine for driving circular saws or cutting boxes, called "Smith's Adjustable Jack," Sept. 25, 1874. C. Shultz, Preston, Waterloo county, Ont. Improvements in wheels for carriages, called "Shultz's Improved Wheel," Sept. 25, 1874. G. R. Sheppardson, La Crosse, La Crosse county Wis., U. S. Improvements in machine for bundling laths, called "Sheppardson's Lath Bundling Machine," Sept. 25, 1874. P. Huff, East Gwillimburg, York county, Ont. Improvements on a machine for restraining breechy cattle, called "Huff's Improved Poke," Sept. 25, 1874. J. Parker, Toronto, York county, Ont. Machine for heating and applying wax to thread, called "Parker's Improved Wax Thread Heater," Sept. 25, 1874. W. P. Tenny, Boston, Suffolk county, Mass. Improvements on disinfectant packages and receptacles for containing disinfecting powder and other powdered and granulated substances, called "Tenny's Disinfectant Package," Sept. 25, 1874. J. M. Gustin, Wilmington, Clinton county, O., U. S. Improvements on combined walking and sulky plows, called "Gustin's Combined Sulky and Walking Plow," Sept. 25, 1874.

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