FEBRUARY 14, 1874.]

E. M. C. asks: 1. Can you inform me of any process by which steel springs exposed to the action of sea water may be prevented from rusting, which willnot impair the temper as galvanizing does? In response to with nickel. But nickel plating does not protect iron or steel when exposed to sea water or sea air. Articles so plated seem to have even an increased tendency to rust, owing possibly to a slow galvanic action. A Sea water is a compound that few metals (and those are rare and expensive) can successfully resist for a great length of time. Zinc and iron are rapidly corroded This is probably owing to the affinity which chlorine possesses for the metallic elements. Gold and platinum, the most unalterable of metals, are rapidly dissolved in nitro-muristic acid, where the attacking element is nas cent chlorine. We would suggest some strongtrans-parent varnish for the steel. 2. I have been told by a plater that the passage of a current of electricity or galvanism through tempered steel (as in electro-plating) destroys the temper. Is this correct, or an error? A. We are not aware of any reliable experiments on this point. 3. Can you give a reliable recipe for marine glue? A. In making marine glue, the india rubber and naphtha should be heated and agitated in a covered ves seluntil solution is complete, and then the powdered shellac added, and heat and stirring continued until li quefaction has taken place.

A. H. D. asks: 1. What is the process of japanning on iron to get a finish like that on sewingma-chines? Is the varnish baked on or not? A. Japanning consists merely in covering the surface of the meta with a black varnish. The principal ingredients of this varnish are amber and asphaltum dissolved in oil. Oil

of turpentine is afterwards added to promote drying. Is bronze or gold leaf used most in ornamenting? A. We should say bronze leaf, from its cheapness. S. Is there have back that the there any book that gives explicit directions for the same? A. Ure's "Dictionary" will give you some information.

W. B. says: "If a galvanic battery consists of a number of cells. each cell containing a leadand a zinc plate, with a solution of sulphate of copper, will any electricity be generated if I join all the lead plates together and the zinc, or will I have to join a lead to a sinc and so on through all the cells before any electricity will be generated? A. By joining all the lead plates to gether. and all the copper, we obtain a quantity current and by joining the lead of one cell to the copper of the next, and so on, an intensity current is produced.

E. V. asks: Is there any trustworthy means of making benzine or benzoline non-explosive? A. The dangerous nature of henzine and similar hydrocarbons is due to their volatility, and the fact that their vapor form with the oxygen of the air a mixture which ex plodes on the application of fare. We can only prevent this by enclosing these compounds in sirtight vessels, or by combining them to such an extent with non-vola tile substances of which they are natural solvents that their vapors have but feeble tension. We know of no chemical means to preserve the chemical constitu tion of pure benzine intact, and yet deprive it of one of its most characteristic properties.

J. L. A. asks: 1. How is adhesive court laster made? A. Dissolve 1 part of isinglass in 10 parts plaster made? of water; strain and add gradually 2 parts tincture of benzoin. Apply the mixture, gently warmed, to the sur face of thin silk, black or white, by means of a camel' hair brush. Give as many coats as necessary, allewing each to become dry before applying the next, and lastly give the prepared surface one coat of the tincture of benzoin alone. The silk should be stretched on a frame 2. How can I dissolve copper, nickel, brass, and other metals easily, so as to mold them? A. You can melt the metals named by exposing them to a strong heat, in crucibles made of a mixture of plumbago and clay. They can then be cast in molds.

J. B. H. asks: How can I remove black ink stains from a white plaster wall? A. Rub the spot with a cloth dipped in a weak solution of oxalic acid, until the stain is removed, and then with a damp cloth. Af terwards rub dry with a dry cloth.

D. M. asks: What metals expand on cooling? A. An alloy that expands on cooling may be made by melting together 2 parts antimony, 9 parts lead,1 part bismuth.

C. D. M. asks: What gums or equivalents are insoluble in coal oil? A. The ordinary vegetable gums, properly so called, of which gum arabic is the type, are insoluble in alcohol, ether, and oils. Their action with coal oil might properly be made the subject of experiment.

V. R. C. asks; What quantities each of acetste of lime, sulphuric acid, and water are necessary to make acetone, such as is sometimes used for corro ding lead? A. You have reference, we suppose, to the production primarily of acetic acid, from which acetone is formed. An ordinary acetic acid may be made without distillation by pouring 60 parts sulphuric acid, dilu ted with 5 parts water, on well dried acetic lime, 100 parts. Digest well in a close vessel, with a gentle heat, stirring occasionally: and afterwards pour off the clear liquid. Acetone is formed by passing the vapor of acetic acid through an iron tube heated to dull redness, and condensing.

 $J,\,O,\,T,\,asks:\,1,\,How\,\,can\,I\,\,remove\,\,conimon$ indisink from mechanical drawings without injuring the paper? A. India ink must be removed by the edge of a sharp eraser or penknife, and the part carefully rubbed over with any hard smooth substance. Fine sand paper is also useful for this purpose. For small errors, it is perhaps best to paint them out with thick Chinese

L. E. G. asks: 1. What is the idea of amalgamating the zinc of a galvanic battery? Can I use common sheet zinc? A. The object of amalgamating the zinc is to prevent the action of the acid upon it except when the electric current is passing. You can use common sheet zinc, but it will soon wear out. 2. How can I make porous cups? A. The porous cupsare made of unglazed earthenware. A potter will probably bake them for you, of any shape desired. 3. Does the acid of the porous cup flow into the fluid of the zinc, or does it evaporate? A. In Grove's battery the nitric acid in the porous cur is gradually decomposed. It merely comes in contact through the porous cup with the fluid in the zinc cell, and this is necessary to allow the passage of the electric current. 4. How is Smee's voltaic battery constructed? A. Smee's battery consists of a strip of silver or platinum suspended between two plates of zinc, and the whole immersed in dilute sulphuric acid

G.B.G. asks: What is the composition and mode of preparation of the enamel, black and white. used on clock and watch faces, and are the letters and figures printed on or put in with a pen by hand? A. Black enamel: Peroxide of manganese 3 parts, zafire 1 part. Mix, and add as required to whiteenamel, which is Washed diaphoretic antimony 1 part, fine glass, free from lead, 3 parts. Mix, melt, pour into water, powder, meltagain; and repeat this three or four times. Figures are put on white enamelias on china, while in the biscuit "state, before vitrification.

A. & B. ask: If there were a hole through the earth, and a ball were dropped in the hole, would the ball everstop, or would it pass through and through dropped in the hol as a pendulum swings? B. says that the ball would stop as a pendulum does when it has no power to move it, that is, shorten its stroke every time it swings untilit stops. A. We thick B. is right.

F. L. K. asks: How can I find the weight of a solid ball15 inches in diameter? A. Multiply the cube of the diameter of the ball in inches by 0.5236, and the weight of a cubic inch of the material of which the ball is composed.

F. P. H. asks: Why does a star, seen with the naked eye, look irregular? When viewed through a telescope, it appears round. A. The twinkling of stars s due both to the varyingdensity of the atmosphere and to the defects in the eye. Stars do not appear round through the telescope except when the latter is out of focus, and then thecause is obvious.

J. C. asks: How can I exterminate red baches? A. Take flowers of sulphur ½ lb., potash 4 roaches? ozs. Melt in an earthen pan over the fire ; pulverize and mske a strong solution in water, and sprinklethe places which they frequent.

J.A. asks: How can I bronze small iron castings? A. Takelpint methylated finish, 4 ozs.gum shellac, 3 oz.gum benzoin; put in a bottle in a warm place, and shake occasionally. When the gum is dis-solved, let it stand in a cool place two or three days to settle; the pour off the clear into another bottle, cork it well, and keep it for the finest work. The sediment eft in the first bottle is to be thinned with spirit to make it workable for first coats or coarse work. It must be strained through a cloth. Then take ½ lb.finely ground bronze green, varying the shade as required by adding lampblack or red or vellow other. Let the iron be clean and smooth: take as much varnish and bronze powderasrequired, and lay on, with a brush, in a thin coat, havingslightlywarmed the articles to be bronzed. When dry, add another coat if necessary, and touch up where required with a little of the bronze on a pencil. Just before it is dry, gold powder may be put on. Varnish over all finally.

J. A. asks: How can I separate albumen from blood? A. By receiving the blood in moderately deep vessels and allowing it to coagulate, much of the serum or albumen will separate and rise to the top whence it may be skimmed off.

R. M. W. asks: What does "Patented, S. G. D. G." mean? The paper on which I saw it came from Europe, and I think the article patented is a French or Belgian invention. A. The French authoritie require these letters to be marked on patented articles. They stand for "Sans Garantie du Gouvernement." without guarantee of the government." 2. Is there any patent on the rubber handstamp? A. You can readily find this out by examining one. Patented articles are required by law to be marked "patented," with date of patent. We believe it is patented. 3. Is there any successful stump extractor ?"A. We have illustrated several stump extractors. 4. What is the best compound for printer's rollers? A. You can make composition rollers by dissolving with heat,in two pounds of treacle, one pound of good glue, previously soaked a night in water. For greater hardness, use more glue. 5. Is it possible to analyze a mixture of chemicals in order to tellwhattheingredientsare? A. Yes.

C. W. says : I had occasion to mend a topaz ring, and I did it in the usual manner, using a round stick of charcoal and imbedding the stone in plaster of Paris. The stone was a dark one and was changed through the operation to a very light one. What was the cause of its changing, and how can I restore it? A. We suspect that heat has had something to do with the change of color. The yellow Brazilian topaz, strongly heated, becomes rose red, and the Saxon topaz, when gently heated, white. We are afraid nothing can be done to restore the color.

H. G. B. asks: 1. Will platinized silver do for the negative metal of a Grove battery? If so, what is the best way to platinize it? Will it do to platinize nner instead of flver? A Either nistiniz copper instead of silver? A. Entire plantified silver, but it | 2 and 4 contain carbonate of copper and copper pyrites. must be well plated. The platinum solution used is | No1 is white pyrites. No. 3 resembles quartz and white the double chloride of platinum and potassium, dissolved in a solution of caustic potash.

M. T. asks: Why does coffee, either ground or in the berry, even if closely kept in a tin can, lose its aroma, and become disagreeable and bitter? A. The aromatic principles of coffee, on which its flavor decoffeeisrigidly excluded from the sir (which is almost impossible in ordinary vessels), the flavor is soon lost. and the bitter principles, among which is tannin, are left behind. The best coffee is made from the freshly roastedand ground berry, by infusing it in boiling water for a few minutes. The coffee should not be boiled in the water.

W. C. asks: What is tungstate of soda, rec ommended for making clothing uninflammable? Would it make wooden tobacco pipes uninflammable? A. Tungstate of soda is a compound of tungstic acid and soda. Tungstic acid can be readily made from the nativetungstate of lime. The compound in solution, to which alittle phosphate of soda has been added, has long been used in England for the purpose of rendering fine fabrics uninflammable. It does not prevent charring from the action of fire, however; its only use be ing to prevent substances burning with flame. It would be difficult to permeate hard wood with the solution.

S. B. R. asks: On what stuffs can the aniline dyes be used? How can I dye cotton goods with anilineblack? A. All fabrics of silk, wool, and cot ton can be dyed with aniline preparations. To get an intense black, it is necessary to mordant in chloride of manganese, working the cotton in it for about an hour wringout well and, without rinsing, pass into boiling soda lye, holding lime in suspension. After the fixation of the manganese salt, wash the cotton in water and pass into a lukewarm chloride of lime bath, taking care that the chloride be not used in excess.

H. A. C. asks: What is the best manner of sticking tinfeil toglass for Leyden jars, disks, etc. ? A. We think gum tragacanth will answervery well.

P. says: I wish to be an engineer. Which would be the best city for me togo to, to get instruction? Is mechanical drawing taught free at the Cooper Institute in New York? Is there anything of the kind in Boston, Philadelphia, or any other large city? A. You can obtain all necessary instruction, including drawing, at the Cooper Institute. We scarcely think you willfind as good a freeschool in any other city in this country.

E. B. W. says: On page 43 of your current volume, W. S. B. asks if a block can be squared on all sides. It is quite common formechanics to firm, in the most positive manner, that this cannot be done. There are a few points connected with this question, which, not being generally understood, cause them to come to this erroneous conclusion. If a good workman will take a try square, such asis commonly found in machine shops, and commenceon a block of metal say two inci-essquare, and work as close as possible, he will find that when he has reached the fourth side, it and theblade of his square will not coincide. There is a cause for this, and it lays mainly in the angle of the square being a small fraction less or more than 90°. When he has eached the fourthside, this error in the square has been multiplied by four, and becomes plainly visible. The whole experiment, then, becomes simply a delicate test of the square. If he will take a piece of sheet steel and form a try square out of it, and with this commence and square the block, noting, when he has reached the fourth side, which way his square is jout, and carefully correct it with a fine file or scraper, he will, after several patient efforts, have it so nearly perfect that no error will appear at the fourth side of the block. In a word, he will have made a perfect try square, and with it he can square other blocks, coming out at the fourth side corectly the first time. The secret of the "impossibility" in this problem rests in the inexactness of tools and workmanship; for certainly if the four corners of the block are just 90° each, the opposite sides will be paral. lel.

J. S. says, in reply to L. and H., who have difficulty in burning sawdust: "I have a boiler of similar dimensions and I burn my sawdust successfully. I use fan (costing only about 12 or 15 dollars) of 24 inches diameter, with & inchwings,driven at 1,000 revolutions per minute. I also employ a trunk made of inch boards to conduct the blast into the ash pit. I use a grate bar which is lighter than the common bar, with the spaces (% inch) running crosswise and of zigzag shape. also a little wood or slack coal to keep the fire going."

A. J. K. says, in answer to J. W. B.'s query as to calculating machines: There are machines which add, divide, subtract, and multiply six figures into six figures. "I used one in San Francisco. There are two in use in that city now. They are manufactured in Paris.

J. C. says, in reply to J. F., who inquired about a certain clock with a glass dial on which the hands turn without any apparent motive power: "I be-lieve the timepiece is nothing but Robert Houdin's clock,which works as follows: At one end of each hand there is a large disk ; these seem to be only counterpoises, but, in reality, they contain concealed watch movements, which, working on the center by means of appropriate levers, cause each hand to move on the dial and mark the correct time in a mysterious manner. If J. F. looks closely on these disks, he will probably see, on some part of their surfaces, squares, used to wind them up with a key, like an ordinary watch."

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

C. L. McC. & Co.-Your specimen is galena in quartz.

B. F. M.-Dark colored clay, a silicate of alumina J.E. S.-Your mineral is white quartz, sometimes houghimproperly, called diamond. The purest variety, which is crystaline and transparent, is used by jewel ers, and is also made sometimes into spectacle lenses, called pebble lenses. Quartz is silica, while the diamond is pure carbon. Quartz will scratch and sometimes cut glass, but not with the facility of the dia mond.

M. R. L.-The minerals sent are oxide of iron, chiefly micaceous oxide, so called from its occurring in small bright spangles likemica. From its glimmering, splen dent appearance you have probably mistaken it for sil ver. The other ores are galena, a valuable ore of This sometimes contains a paying quantity of sliver but this can only be estimated by an analysis.

J. E.G.-1, epidote; 2, quartzite; 3, copper pyrites; serpentine; 5, chlorite schist: 6, carbonate of lime.

G. S. R. asks: How can I reduce leather, buffalo hides, for instance, to a pulp, which will set in-to a hard and durable mass?—A. M. asks: How can I find the weight of a person's head without cutting it off?—J. V. B. asks: Is there any substance with which I can coat cardboard, to make a white slate, to be written on with a lead pencil?-G. W. F. asks: 1. Can you piveme a rule for setting out circular saw teeth? 2. How can I temper a burrf or gumming out saw teeth ?-C. P. asks: In taking impressions of the human head in plaster. I have trouble in making the hair and whiskers stand out naturally. What can I do to remedy this?

COMMUNICATIONS RECEIVED.

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

On the Morse System of Telegraph Signals By W. L.

On Utilizing Coal Dust. By J. H.

On the Preservation of Timber. By J.H.M On the Principles of Ventilation. By C. A. W.

On Asphalt. By C. F. D.

On the Relative Attraction of the Earthand Sun. By W. M. D.

On a Substitute for Mica in Stoves. By A. A. H.

On Mr. R. A. Proctor and the Million Dollar Telescope. By S.H. M. Jr.

On Preventing Incrustation in Boilers. By E. On Ocean Towers. By W. K.

Also enquiries from the following :

S. H. W.-H. C. A.-H. S. W.-H. B.-W. W. A.-L.A.C. -G. S.-W. W. S.

Correspondents in different parts of the country ask : Who makes a centrifugal clothes wringer? Who make smoke-consuming devices for boiler furnaces? makes corn-shucking machines? Who makes woodworking machinery bits? Who makes an instrument, other than the ear trumpet, for helping the partially deaf to hear? Makers of the above articles will probably promote their interests by advertising, in reply, in the Sci-ENTIFIC AMERICAN.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amount sufficient to cover the cost of publication under the head of "Business and Personal" which is specially devoted to such enquiries.

[OFFICIAL.] **Index of Inventions** FOR WHICH

Letters Patent of the United States WERE GRANTED IN THE WEEK ENDING

January 13, 1874,

AND EACH BEARING THAT DATE. [Those marked (r) are reissuedpatents.]

| Adding machine, C G. Spalding | 146.407 |
|---|----------|
| larm, electric ship, J. B. Andrews | 146,421 |
| Auger, Ladd and Grover | 146,844 |
| Axle box, vehicle, E. L. Kinsley | 146,394 |
| Bag fastener, S. Wellington | 146,417 |
| Baton, policeman's, Clark et al | 146,431 |
| Beam and rafter, H. C. Luedeke | 146,350 |
| Bed bottom, spring, A. W. Hight | 146,458 |
| Bed bottom, spring, S. H. Reeves | 146,360 |
| Billiard chalk holder, J. Plunkett | 146,856 |
| Blind, inside, J. H. Voorhees | 146,414 |
| Boiler, steam, R. J. Gould | 146,331 |
| Bolt heading machine, J. R. Abbe | 146,374 |
| Bottle washing machine, C. W. Farciot | 146,3.2. |
| Bracket, shade roller, A. S. Dickinson | 146,385 |
| Bridge, R. Long, | 146,397 |
| Bridge baluster, iron, Sellers et al. (r) | 5,780 |
| Bridge truss. B. F. Graham | 146,332 |

or liske white 9 How can the drawings he cleaned without injury to either paper or ink? A. A good qualityof fine vulcanized rubber should clean your paper without leaving dirt. Try stale bread. 3. Can the roots of the following equations be obtained? If so,

how? $\left\{ \begin{array}{l} x^2+y=7\\ y^2+x=11 \end{array} \right\}$ A. These equations involve the higher mathematics and we could not publish the solution in these columns. A glance will show that x=2 and y=3. 4. How can 1 best secure a place as assistant to some civil engineer? A. Under the circumstances, we can offer little practical advice. There is always a fair demand for skilled and experienced engineers, but in or der to start in this, as well, indeed, as in any other profession, the influence and aid of friends is of incalcula ble advantage. You might make it a point to call upon the superintendents of railroads in your vicinity and prefer your request in person for a place, or perhaps en-deavor gain room in the office of some well known engineer, where you could learn much of the profession. and besides form acquaintances which would lead to a more lucrative position.

F. M. D. asks: Is there any invention, pat-ented or otherwise, for the purpose of aiding pedestri-tnism, such as a spring attached to the foot? A. Devices so assist the feet in walking have been made.

G H J asks: 1 What are the so-called glass cards made of, and how are they colored? A. You probably mean cards glazed with soluble glass. This can be applied in the liquid state like a varnish. When dry, it forms a hard, glassy, transparent surface. Various pigments can be used for coloring. See our adver tising columns.

J. D. says: I produce an orange color with bichromate of potash, alum, litharge, acid, and soda. Whatmust I add to deepen it? A. This is a matter to be determined by experiment. Consult some practical chemist, who may have facilities at hand to make the necessary experiments.

W. V. D. asks: How much worm surface is required to condense a gallon of proof spirit in an hour 1 am told that, to condense 200 gallons of proof spirit in 12 hours, about 180feet of 2% or 3 inch copper pipe would be required. A. This is a question which wecan hard-ly dismiss satisfactorily in a few lines in this column. You should read the article on evaporation in Ure's Dictionary.

pyrites.

E. G. A.-Your specimen did not reachus. Send us a small sample.

T. M.B.-This is a specimen of earthy chlorite, consisting chiefly of silica, magnesia, alumina, and oxide of iron. The term chlorite is derived from a Greek word meaning green, on account of the greenish appearance of the mineral. It is of no economical importance, al though the compact variety was employed by the Indians for pipes.

J. W.-Your specimens are others, that is, clays charged with oxide of iron, to which their coloris due. The red especially seems to be avaluable mineral paint. You should correspond with some one who is interested in the use or sale of such articles.

S. B. B.-Your mineral is decomposed hornblende.

J. W. Jr.-The enclosed is blue clay, a silicate of alumina. When clay burns white, it is used in the manufacture of white earthenware.

R. M. L.-Your mineral is specular oxide of iron.

S. C.-Clay containing much free silics and brown exde of iron.

| | Bridge truss, B.F. Granam 146,332 |
|---|--|
| | Bridge, truss, Patterson et al 146,400 |
| | Bridge, connection, A. Bonzano 146,425 |
| | Bucket, windlass elevator, J. P. Christensen 146.315 |
| | Bucket, hoisting, T. Eaton 146,325 |
| | Buckle, harness, G. Rieger 143,361 |
| | Buckle, harness, A. Walker 146.495 |
| | Buggy top, slat iron, English et al 146,440 |
| | Burial casket, I. Charles 146,381 |
| | Can opener, Paillard et al 146,355 |
| | Car axle, W. H. Wright 146,373 |
| | Car axle box, W. A. Dripps 146,487 |
| | Car brake, T. Campbell 146,430 |
| | Car coupling, D. A. Bainter 146.375 |
| | Car coupling, T. R. Jackson 146,342 |
| | Car coupling, Morgan et al 146,398 |
| | Car coupling, J. Robertson, Jr 146,402 |
| | Car coupling, S. S. Sartwell 146,363 |
| | Car coupling, G. D. Spielman 146,408 |
| | Car, stock, J. B. Calkins 146,378 |
| | Carbureter, I. L. Carr 146,313 |
| ł | Carbureter, H. Jungling 146,458 |
| | Carbureter, C. L. Vasquez 146,493 |
| | Carriage, child's, J. L. Brown 146,311 |
| | Chair, folding opera, T. J. Close 146,432 |
| | Chandelier, L. Hull 146,455 |
| i | Check, composition, W. Sanderson 146,408 |

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inventions are found to pay correspondingly well. The names of Blanchard, Morse, Bigelow, Colt, Ericsson, Howe, McCormick Hoe, ेव and others, who have amassed immense fortunes from their inventions, are well known. And there are thousands of others who have realized large sums from their patents.

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This is the closing inquiry in nearly eve-

office. A positive answer can only be had by presenting a completeapplication for a patent to the Commissioner of Patents. An application consists of a Model, Drawings, Petition, Oath, and full Specification. Various official rules and formalities must also be observed. The efforts of the inventor to do all this business himself are generally without success. After great perplexity and delay, he is usually glad to seek the aid of persons experienced in patent business, and have all the work done over again. The best plan is to solicit proper advice at the beginning. If the parties consulted are honorable men, the inventor may safely confide his ideas to them ; they will advise whether the improvement is probably patentable, and will give him all the directions needful to protect his rights,

his invention if susceptible of one, although sometimes it may be dispensed with ; or, if the invention be a chemical production, he must furnish samples of the ingredients of which his composition consists. These should besecurely packed, the inventor's name marked on them and sent by express, prepaid. Small models, from a dis tance, can often be sent cheaper by mail. The safest way to remit money, is by a draft or postal order, on New York, payable to .h. order of MUNN & Co. Persone who live in remote parts of the country can usually pur chase drafts from their merchants on their New York correspondents.

This is an inquiry which one inventor naturally asks another, who has had some experience in obtaining pat-

Construct a neat model, not over a foot in any dimen-ion-smaller if possible-and send by express, prepaid, addressed to MUNN & Co., 37 Park Row, together with a description of its operation and merits. thereof, they will examine the invention carefully, and advise you as to its patentability, free of charge. Or, if you have not time, or the means at hand, to construct a model, make as good a pen and ink sketch of the improvement as possible and send by mail. An answer as to the prospect of a patent will be received, usually, by return of mail. It is sometimes best to have a search made at the Patent Office; such a measure often saves the cost of an application for a patent.

Preliminary Examination.

In order to have such search, make out a written description of the invention, in your own words, and a pencil, or pen and ink, sketch. Send these, with the fee of \$5. by mail, addressed to MUNN & Co., 37 Park Row. and in due time you will receive an acknowledgment thereof, followed by a written report in regard to the patentability of your improvement. This special search

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Did patentees realize the fact that their inventions are likely to be more productive of profit during the seven years of extension than the first full term for which their patents weregranted, we think more would avail them-selves of the extension privilege. Patents granted prior to 1861may be extended for seven years, for the benefit for the inventor, or of his heirs in case of the decease of fomer, by ducapplication to the Patent Office, ninety days before the termination of the patent. The extended ane intres to the benefit of the inventor, the assignees under the first term having no rights under the extension except by special agreement. The Government fee for an extension is \$100, and it is necessary that good professional service le obtaine ito conduct the business before the Patent Office. Full information as to extensions may be had by addressing MUNN & Co. 37 Park Row, New York.

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APPLICATIONS FOR EXTENSIONS. Applications have been duly filed and are now pending for the extension of the following Letters Patent, Hear ingsupon the respective applications are appointed for the days hereinafter mentioned:

27,898.—REFLECTOR.—I. P. Frink. April 1. 27,991.—HARVESTING MACHINE.—M. Hallenbeck. April 1. 27,923.-FENCE MAKING MACHINE.-J. Moore et al. Ap.1 28,338.-GRAIN BINDING MACHINE.-D. W. Ayres. May 6.

EXTENSIONS GRANTED.

26,860.—TINWARE MAKING MACHINE.—S. J. Olmsted. 258 (whole No. 31,262).-FARE BOX.-J.B. Slawson.

DISCLAIMER. 26,860.-TINWARE MAKING MACHINE.-S. J. Olmsted.

DESIGNS PATENTED.

7,104.-WATCH CASES.-L. Bushnell. New Bedford, Mass 7,105.-BOTTLES.-A. Michael, New York city.

,106 .- BATH TUBS .- J. L. Mott, Mott Haven, N. Y. 7,107 .- PICTURE FRAME.-E. Renaudet al., New York city 108.-CARPET.-T. J. Stearns. Boston. Mass.

,109.—PACKING BOX.—S. F. Whitman, Philadelphia, Pa 7,110.-TABLE CASTER HANDLES.-H. C. Wilcox, West

7.111.-CAKE OR FRUIT BASKETS.-H. C. Wilcox, West Meriden, Conn.

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sign (7 years)......812 [Specially reported for the Scientific American.]

CANADIAN PATENTS.

LIST OF PATENTS GRANTED IN CANADA,

JANUARY 23, 1873.

3,054.-H. M. Baker, W. F. Stone and J. H. Vermilya Washington, D. C., U. S., assignees of G. W. Hunter, same place. Improvements on sewing machines, called

"Hunter's Sewing Machines." Jan. 23, 1874. ,055.-J. Pratt and A. Roy, Montreal, P. Q., assignces of J. Goullioud, same place. Nouvelles et utiles amelior ations aux machines a tisser les corsets, les guetres, etc., called " Temple Entraineur Ameliore." New and use ful improvements in machine for weaving corsets, gaiters, etc. Jan. 23, 1874.

3,056.-H. Martin, Chicago, Ill., U. S., M. H. King, Spring-field, Hampden county, Mass., U. S. Improvements on brick machines, called "Martin's Brick Machine." Jan. 23, 1874.

3,057.-E. N. Randall, West Troy, Vt., U. S., and G. E. Braley, same place. Improvements on milk vats, called "Randall's Improved Milk Vat." Jan. 23, 1874.

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