# Printing with Aniline Black,

When ammonia is added in excess to a solution of alum, a gelatinous precipitate is formed which consists of the hydrated oxide of aluminum. This hydrate is soluble in acids, acting in that case as a base, but it is also soluble in caustic soda and potash, when it acts as a weak acid and forms salts known as aluminates of soda and potash. The aluminate of soda can be prepared very cheaply, and is advantageously employed, according to Dr. A. Kielmeyer, for coating the cloth placed under the calico and running along with it. In calico printing a portion, of course, of the color or mordant employed passes entirely through the cloth which is being printed; and to prevent it from being deposited on the pressure rollers and returned to a clean part of the cloth upon the second revolution, it is customery to have a piece of thick woolen cloth (a little wider than the calico, running between the calico and roller to take up this excess) and to pass it over one of the heated cylinders; it is thus dried and can be used two or three times before it has to be cleaned. The great expense of these "travellers" and the lobor of cleaning them has induced several calico printers to substitute a piece of the unbleached cotton cloth. After being used once it can be bleached and is in no way injured for calico, except in one particular case. A piece of unbleached muslin which has been soiled by aniline black cannot be entirely cleaned by the bleaching process, and, moreover, the fiber is injured. For this reason it has been necessary to adhere to the old method of expensive woolen "travellers" when using aniline black.

Dr. Kielmeyer has, however, made the interesting discovery that aluminate of soda mixed with scorched starch prevents the aniline black from attaching itself to the cotton. The alkalinity of this substance prevents the black from being developed; and at the same time, the solid hydrate of alumina is formed where aniline black and aluminate of soda come in contact, and protects the fiber by preventing the black from coming in contact with it. Attempts to employ the carbonate and acetate of alumina for the same purpose have not succeeded well; for although they check the development of the black, they do not form that insoluble laver which protects the fiber.

In preparing the goods, the unbleached muslin, as soon as it is singed, is passed twice through a cold solution of aluminate of soda of 4 or  $5^{\circ}$  B. It is left unrolled for two hours that it may become evenly distributed throughout the goods, and then dried on the hot cylinders. The cost of material for preparing a piece 164 feet in length is, in Germany,

about 4 cents. For light patterns, like shirtings, it can be emanate from the sewage. Thus the power of the water used over two or three times, for heavier ones but once; and if the pattern is very heavy, a solution of 10° B. should be employed. Before proceeding to bleach them, they are placed in a muriatic acid solution of 2° B. and washed. After bleaching there will be no trace left of the black. It has also been observed that the black patterns printed over this background do not strike through the goods so much as otherwise, and consequently the fabrics are not weakened so much; but upon the right side they are perfectly bright and full. Even this latter is of no small account when we remember that all aniline black, if never so carefully prepared, has more or less tendency to rot or weaken the fiber.

# IMPROVED SHOEMAKER'S PINCHERS.

Mr. William H. Hanna, of Chico, Butte county, California, has recently patented, through the Scientific American Patent Agency, an improved form of shoemaker's pinchers, an engraving of which we here-

with present.

It will be observed that the distance between the ends of the jaws and the pivot is considerably shortened, so as to secure greater power of grip. For the same purpose, the lever is extended beyond the extremity of the handle. On the under side of the lever is made a projection, so that the jaws act as a fulcrum against the last and thus preserve as large a range of movement as can be afforded with the ordilonger jaws. The upper lever is placed in about the same plane as the jaws, so that the line of draft coincides with the lever, and the lower handle does not come in contact with the last, as is commonly the case before the leather is sufficiently strained. The teeth abut against the turning face of the jaws so as to bring the bite near to the pivot, thus enabling the upper to be drawn as close as is desirable to the last. It is stated that there is no slipping off of the tool in cases of unusual strain and it is 22, 1873. Further particulars

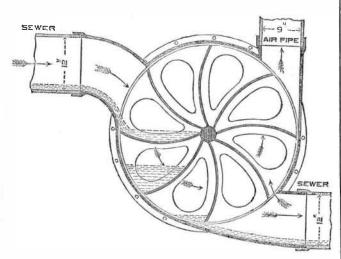
# A Check to Railway Enterprises.

Among the had effects of the recent financial crisis is the cessation of work upon unfinished railways and railway machinery in various parts of the country. Many thousands of laboring men have been suddenly thrown out of employment, and a winter of suffering appears likely to overtake hundreds of worthy families.

As an example of the mischief wrought by this unfortunate state of things, we may mention that the orders for locomotives at the Rogers works, Paterson, N. J., have been canceled and 600 men have been discharged. It is supposed that the principal locomotive shops will soon discharge several thousand men in the aggregate.

# VENTILATION OF SEWERS.

The annexed diagram represents one of a series of fans placed in the line of a sewer, with an air pipe from it, supposed to be in connection with the atmosphere above the houses. It is the design of Mr. John Phillips, given in the Builder. By causing the sewage to fall into the fans on one side near the top and to escape on the other side at the bottom, they are made to rotate, draw air out of the sewer, and force it up the pipes into the atmosphere. The fans, therefore, are self-acting; and, if properly constructed and fixed, will not get out of order. If, in addition to the usual drain communications, pipes are laid from the open air into the sewer, at points midway or nearly so between the fans, it is evident that the air currents, established along the sew er by the rotation of the fans, will remove the gases as they



flowing in the sewers not only carries off the sewage, but, by falling into the fans, with air pipes to and from the sewers in connection with the atmosphere, it is made available for ventilating the sewers as well.

# Some New Phosphoric Compounds,

A. Gautier has prepared a singular compound of phosphorus with oxygen and hydrogen, which has the formula  $P_4HO$ . If a certain quantity of crystallizable phosphorous acid is sealed up in a tube with 5 or 6 times its weight of terchloride of phosphorus and heated to 79° C., hydrochloric acid and pyrophosphoric acid are produced. A bright yellow colored compound gradually separates, and can be obtained by first distilling off the excess of chloride of phosphorus, cooling the residue to-10° C., addingice water, and then fillering. After washing on a filter, it is dried in a vacuum and then heated to 140° in a current of carbonic acid gas. The reaction is thus represented :  $11PCl_3 + 27PH_3O_3 = 4P_4H$  $0 + 11P_2H_4O_7 + 33HCl$ . When the reaction takes place at a temperature of 170° C., red phosphorus and pyrophosphoric acid are formed? The compound P4HO is an amorphous body possessing a beautiful yellow color, insoluble in water, alcohol, ether, benzol, chloroform, oil of turpentine, glycerin, and acetic acid. It can be heated to 250° C. in dry carbonic acid without change. Heated in the air, it burns slowly with flame; mixed with chlorate of potash, it is exploded by percussion.

The same chemist has also obtained a compound whose formula is P5H3O, by mixing the biniodide of phosphorus, PI2, rapidly with a large quantity of water. The new body is amorphous, of a pure vellow color, tasteless and odorless. and insoluble in any solvent. It is oxidized very violently by ordinary nitric acid, also by sulphuric acid. Heated in a nary instruments with much current of dry carbonic acid to 135° C., it is decomposed, phosphuretted hydrogen being evolved. Ammonia forms with it a brown compound; but on neutralizing with hydrochloric acid, the original substance is restored. The properties of the body P5H30 seem to agree with those of solid phosphuretted hydrogen, P.H., described by Thénard.

that every department is complete in a full representation of the important arts and industries to which each relates, so that in our future references to this fair will doubtless be found descriptions of many novel and important inventions. To the Kansas City and Cincinnati expositions, we have

already alluded in detail. Both are succeeding admirably, and exciting no small interest in their respective vicinities. Indiana, in her State Fair now in progress at the Fair Grounds of her capital city, is making an excellent show of the manufactures and industries carried on within her borders. Louisville, Ky., celebrates a second Annual Exposition, and in St. Paul, the Minnesota State Fair was recently opened. In Baltimore, the 26th Annual Exhibition of the Maryland Institute, and in New Orleans, the Louisiana Fair, will afford the manufacturers of the Southern States a means of displaying local productions. Canadian industries will find representation in the Montreal Exposition and in the International Fair soon to be opened in Buffalo, N.Y. The excellent results of the experimental show of 1872, in Newark, N. J., has stimulated its projectors to new efforts, and we are promised an exhibition even superior to the very creditable one of last year. In Albany, we learn that the New York State Fair is attracting 20,000 people per day, and that the display of live stock, especially, has never before been equaled. In our own immediate neighborhood is the Kings County Fair, held in the Rink on Clermont avenue, in Brooklyn, and devoted to the local manufactures and industries of our sister city ; while in New York is in successful progress the 42nd Exposition of that patriarch among fairs, the American Institute.

### Inventions Patented in England by Americans. [Compiled from the Commissioners of Patents' Journal.] From September 6 to September 9, 1873, inclusive. BLAST FURNACE .- T. F. Miner, Albany, N.Y.

ENGINE VALVE.-H. I. Hoyt, Norwalk, Conn. FLOCK CUTTING MACHINE.-J. Pitts, Melville. Mass., et al.

# Becent American and Foreign Latents.

Improved Pruning Knife. Abraham C. Hulse and Joseph S. Crum, Palmyra, Ill .- This invention consists in constructing the parts of a pruning knife in<sup>1</sup> such a manner that it may be quickly and conveniently changed from a shrub to a tree pruner or the reverse.

#### Improved Chain Clamp.

Charles E. Evard, Leesburgh, Va.-This consists in movable jaws, provided with rectangular recesses across the upper corners and horizontal chain rest, the said jaws when closed leaving an intervening open space large onough for the downward passage of the rivet.

# Improved Ventilator.

John Ballou, Boston, Mass.-This is a frame in which a revolving ventilator is arranged so that the draft can be governed and light not be excluded. The device consists of four wings, two of glass and two of wire gauze, amounting to two planes set at right angles to each other. By a quarter revolution, the glass will be thrown into a horizontal position, and the perforated pieces will take its place, thus admitting air while excluding insects.

# Improved Farm Gate.

Edward B. Decker, Carrollton, Ill.-This invention is an improvement in in the class of farm gates wherein the lower part may be raised and lowered independently of the upper part. Two lower bars are pivoted at their rear ends to one of the gate standards or cross bars. Their forward ends enter slots in the opposite cross bar. To one of the upper horizontal bars is attached a latch and hook, the latter of which, when the lower barsare raised, catches their forward ends and holds them up.

# Improved Milk and Cream Cooler.

Henry C. Baldwin, North Wolcott, Vt .- The outer vessel of this cooler is provided with a spout upon its upper part for pouring in, and with a short pipe in its lower part for drawing off, the water. There is also an opening to allow the waste water to escape when a stream of running water is introduced into the spout. A ringfange is attached to the bottom of the outer vessel to support the inner vessel, so that there may be a water space between the bottoms, and has a number of holes to allow free circulation. To the outer vessel are pivoted hooks to keep the inner vessel in place when the water is poured in. The cover has ventilators to allow the air to circulate freely, the mouths of said ventilators being covered with wire gauze.

# Improved Fluting Machine.

Edward M. Deey, New York city.-The first part of the invention consists of an arrangement of devices for adjusting the roller and regulating the pressure, whereby the roller which is raised to facilitate the adjusting of the goods can be raised without contracting the pressure springs. Less power is thus needed than is required to lift it against the springs. The second part consists of guides in connection with the roller to control it against lateral vibration. The third part consists in having the wheel by which motion is imparted to one of the rollers provided with and rigidly attached to a short shaft which couples with the roller, so that the latter can be removed without disturbing the wheel, and without the necessity of sliding the wheel off and on a portion of the roller.

# Improved Steam Lubricator.

Reed A. Filkins, Cheskire, Mass .- It is proposed to have a hollow globe holder for the oil, having a hollow standard, with a conical enlargement of the hollow space at the lower end. This end screws into a hollow stand on the steam chest or journal box. A stationary conical plug projects upward from the bottom of the socket into the hollow of the lower end of the standard, so as to regulate the flow of oil by closing the mouth of said standard more or less, as the holder and standard are screwed up or down. The holder has a notched ring around its middle, which is graduated and numbered to show the extent of the opening of the feed at the mouth of the standard, and a spring click engages it to hold the oil holder to any position in which it is set. From the socket below the standard of the holder the oil enters a little chamber, in the middle of which a tube rises around the passage from said chamber into the steam chest to retain a quantity of oil in said chamber. In feeding, the oil will flow from the surface of the body contained in said recess, on the top of the tube, and down the inner surface of it, while the steam rises up in the center of the space. There is a valve which will screw into the proper passage and close it, so that the steam may be shutoff at any time to allow of taking off the holder when it may be desired to do so.



SPUC.

# The Industrial Expositions.

The reports of the openings of the various industrial fairs throughout the country indicate the strong favor with which this graphic system of demonstrating the material progress of the nation is regarded by the people From all accounts, the number and variety of the productions displayed has never been exceeded during any previous year; nor does it appear that any single fair has, from the hour of its commencement, failed to attract throngs of interested visitors. The Chicago Inter-State Exposition, a full description of the immense buildings of which (800 feet long by 200 feet not liable to tearthe leather or in width), constructed through the generosity and enterprise hurt the hand. Patented July of the citizens of Chicago, we have already presented, was recently formally opened, and during the first day of the exwill be found in the advertising columns of our present hibition 20,000 people entered its doors. Regarding the articles displayed, it is yet early to particularize. We learn radius.

# Improved Breech Loading Fire Arm.

DanielHug, New York city, assignor to himself and William H. Speer, Jersey City, N. J.-This invention consists in a pivoted breech block, having a spring hook connected therewith and a cartridge extractor arranged centrally beneath the barrel, combined, to extract the old cartridges and throw them clear of the gun, as well as support the new one.

Improved Projectile. James G. Hope, Wichita, Kas.-This invention is more particularly an improvement on the projectile for which letters patent were issued to applicant October 4. 1870; and consists in providing the stem of the projectile with a double set of guide wings, one for preventing its rotation during flight, and the other for causing it to describe a curve of greater or less

# Improved Can Soldering Machine.

James F. Spence, Williamsburgh, N.Y.-This invention consists in providing means for feeding cans to a soldering apparatus, and for reversing holders which are adapted to be fastened conveniently against the wall of of a patent will be received, usually, by return of mail. It is sometimes them so that both heads may be soldered to the body in rapid succession and without the removal of the same from their holder.

# Improved Ventilating Window Sash.

Collin Pullinger, Philadelphia, Pa.-This invention relates to convenient modes of ventilating rooms through the windows without bringing to bear ined. It also consists in providing the portfolio supports with end guards upon the persons therein a cold draft of air. The invention consists in a novel arrangement of a small supplementary sash to slide above the top and to the bottom sash.

#### Improved Rudder for Vessels.

Juan B. Baptista, New York city.-This invention is an improvement in rudders of the hollow class, and consists in forming a balanced rudder of two parallel plates attached to transverse bars, which impart rigidity to said plates, and are in turn secured to the vertical shaft in such a manner as to leave a space between each of said plates and the shaft. The object is to increase the surface acted on by the water.

#### Improved Fence.

Wilbur S.King, Gonzales county, Texas.-This invention relates to fences where timber is scarce, and where the object is to make a fence which will turn hogs as well as cattle and horses, at the same time being cheap, easily put up, and susceptible of quick and ready repair. It consists in posts, rails and stakes, wired together so as to allow the lower parts to be filled with brush.

# Furnace for Producing Wrought Iron from Ore.

George E. Harding, New York city.-This invention consists in combining, with a rotary puddling furnace, a gas-producing furnace and a deoxydizing chamber, so that the waste gases maybe conveniently applied to deoxydize and carbonize the ore preliminary to its reduction.

Improved Combined Wardrobe, Bedstead, Chair and Table. Walker Getchell, Bath, Me.-The front of the cabinet has narrow sides

constituting the pendent sides of the table top when detached from the case and arranged for the table. The folding legs are pivoted to it, buing let down and fastened by buttons. Part of the top of the cabinet constitutes the back of the chair, and has the seat hinged to it. It also has an upholstered cushion above the seat; and this is so fitted on the back and in combination with the sweep, to insure the parallelism of the sweep connected to the seat that, when it swings down against the side of the back to adjust the latter for its place in the cover, it draws the cushion down below the top to uncover the end sufficiently to rest on the top of the sideboard of the cabinet, and when the seat swings up into position it moves the cushion up to hide the back. The sides of the chair are formed of two boards, which nest together so as to be laid on the top of the cabinet and constitute the balance of the cover. The sections of the sides of the case, and boards between the front and the main part, comprise the principal portion of the bed or reclining couch. The wash stand, with a towel rack attached, is mounted on a door, which is hinged to the side where an opening is made in the side of the case into a chamber within, so that the stand swings in to the case and is inclosed when the door is shut, and swings out for use when the door is opened. At the side opposite the one having the wash stand, a drawer is arranged for linen and other like goods.

# Improved Umbrella.

John McAuliffe, New York city .- The inventor makes clips or laps for fastening to umbrella ribs, to pivot the braces to, by taking little strips of sheet metal, well coated with tin, and folding the ends over back on one side, enough to make the elevation of the folded part about half the thickness of the rib. and so that the space between the said folded part will be just enough to wrap around the brace and inclose it snugly when the folded parts meet on the inside of the rib. A projection is thus formed to which the branched end of the brace can be pivoted. These ends and the folds are united together, and also the lap to the rib, by a drop of solder.

# Improved Wheel Plow.

Lionel W. Richardson, Roscoe, Ill .- This invention is a sulky attachment, which may be applied to the beam of an ordinary plow. The axle is bent in peculiar shape. One wheel works on a crank axle, which, by a suitable lever, may be adjusted so that the wheel may run in a furrow or on the surface and the machine still remain horizontal. The plow has a free lateral and vertical movement, easily governed by a lever at the hand of the driver,

### Improved Machine for Turning Wagon Axles.

George A. Bolser, Indianapolis, Ind.-This invention consists of a nove arrangement of the tool carrier, pattern, and feed screw, in a machine in which the stick to be turned is stationary and the cutter is revolved around and fed along the stick. The axle, the ends of which are to be turned, is laid on a bench between the posts and centered by suitable means. A large short tube is bolted to the posts in the axis of the machine, so that the axle to be turned projects through it. A pulley revolves on this tube, and carries the face plate, in front of which, at a suitable distance, is another face plate, in four arms, arranged on the sleeve of the tail center and connected to the first face plate by a rod, feed screw, tool supporting rod, and the pattern rod or centers, all of which are arranged at equal distances apart around the axis, and at equal distances therefrom. The pattern is a facsimile of what is to be produced. It extends from the face plate to one of the arms, and is fixed on them so that it can revolve, making one revolution on its axis during each revolution which it makes around the axle. The tool holder consists of a freely moving bar, and it rests on the pattern The cutteris attached to the bar on the side next to the pattern. The tool bar is moved along slowly in the direction of the axis of the axle to carry the tool from one end to the other of the part to be turned. It is also pro posed to utilize this machine for making oval tenons on spokes upon the same plan.

Improved Wood Filling. Jerome E. Dittenhaver, Chapaleau, Ohio.—This invention relates to a compound for filling wood previous to the application of a paint or var-nisn, and consists in a preparation which is entirely devoid of color, and will not therefore change the characteristic hue of the wood, which can be applied with an equally favorable result to all varietics, and which permeates so thoroughly the pores and fills so completely the interstices tween the fibers that a single coat of varnish or paint will be generally sufficient to produce the designed outside face upon the wood.

## Improved Railroad Water Crane.

### Improved Portfolio Holder.

Jonas B. Aiken, Franklin, N. H.-This invention relates to portfolio a room and above the wash board. It consists in the mode of combining the two side frames with the bottom support of the portfolio, so that the latter maybe held closely locked and protected against unnecessary handling while it may be also held at an oblique angle so as to be easily examwhich prevent withdrawal of the portfolio and are adjustable to those of different sizes.

# Stop Mechanism for Doubling and Twisting Machines.

William Cockcroft and Reuben Ackroyd, of Chester, Pa., assignors to themselves and James Massey, of same place.-This invention consists of a stop motion in connection with the feeding or delivering roll of a twisting machine, so contrived that if the threads or yarns break it will stop the delivery, and thus prevent the ends from going from one spindle to another. The tension of the yarn holds the inner weighted end of a lever up above stud pins on the pulley of the delivery roll so long as theyarn remains taut and unbroken, but when the yarn breaks the inner end of the lever will fall and stop the delivery roll by engaging one of the stop pins, and thus prevent the further delivery of the yarn untilit is mended.

Improved Machine for Rolling Round Tapered Bars. Charles F. Brown, Warren, R. 1.-The object in the present invention is to facilitate the manufacture of spindles and all articles of tapering form and it consists of two eccentric disks revolving in opposite directions on a central arbor in a suitably constructed frame, so beveled as to roll or straighten a tapering spinale or other article, and in one or more guides through which the article to be tapered is introduced. The eccentric sur faces have the effect of inclined planes upon the spindle, approaching each other in one part of their revolution, and receding from each other in an other part, while the spindle simply revolves and receives its form and shape from the pressure imparted by the beveled and eccentric revolving surfaces.

Improved Saw Tooth Gage. Cyrus E. Grandy, Stafford Springs, Conn.—This invention relates to ap ingenious apparatus for temporary attachment to the saw mandrel of a circular saw, to gage the teeth round and as to the set; and consists, first, of improved means for attaching the sweep to the mandrel; second, a templet with the saw, and an arrangement of the tooth gage supporting arm in the end of the sweep to shift laterally, as required, to adjust the gages to the plane of the saw; third, an arrangement of the gage holding arm to oscil-late in the sweep, to adjust the gage to the front face of the teeth; fourthl an adjustable gage, with a scale so arranged on the aforesaid arm that the angle of the teeth frontmay be gaged by it with certainty (it is also arranged so as to gage the teeth round); fifth, an adjustable gage on the afore said arm for gaging the set of the teeth: and, sixth, an upsetting swage holder on the said arm.

### Improved Compound Metal Working Machine.

George L. Jones, Vanville, Wis.-The object of this invention is to fur-nish for the use of blacksmiths and wagon manufacturers a combination tool, by which the operations of cutting and punching iron, and the tight-ening, upsetting, and bending of tyres may be accomplished in a single mai heframe of the instrument, of oblong shape, is firmly secured to chine the ground, and provided with strong vertical standards between which is pivoted an eccentric which is operated by a lever. The eccentric operates on the knee joint levers, one of which is hinged at its outer end to a heavy block, moving in a recess of the frame. The block is pivoted with its lower end to frame, and provided with a cutting blade which acts on a similar blade of the frame in the manner of shears. The other knee joint lever is hinged to a sliding carriage which moves in a recess, and to which is secured, in the direction of the longitudinal axis of frame, the puncher, which acts on a perforated steel cutter in a socket. The upper side of carriage is grooved and has a vertical extension plate which carries a strong bar or boltand a partially grooved eccentric. Other eccentrics and grooved bases are arranged, between which and their corresponding grooved bases, the wagon tyre is clamped and either tightened or upset when off the wheel, as required, by the lever acting on carriage. For bend-ing or rolling the tyre the cylindrical rollers are arranged sidewise of the frame. The outer rollers are adjustable for tyres of differentsizes and thicknesses. The notched roller is placed between and above the outer rollers and turned by a crank, giving the bend to the tyre on its passage through them.



ROBABLY no investment of a small sum of money brings a greater return than the expense incurred in obtaining a patent even when the invention is but a small one. Larger inventions 5 are found to pay correspondingly well. The names of Blanchard, Morse, Bigelow, Colt, Ericsson, Howe, McCormick, Hee, and others, who have amassed immense fortunes from their inven-ြာရ tions, are well known. And there are thousands of others who have realized large sums from their patents.

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# 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 thesewith the fee of \$5, by mail, addresced to MUNN & Co., 37 Park Row, and in due time you will receive an acknowledgment thereof, followed by a writ ten report in regard to the patentability of your improvement. This special search is made with great care, among the models and patents at Washington, to ascertain whether the improvement presented is patentable.

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The applicant for a patent should furnish a model of his invention if susceptible of one, although sometimes it may be dispensed with; or i the invention be a chemical production, he must furnish samples of the ingredients of which his composition consists. These should be securely packed the inventor's name marked on them, and sent by express, prepaid. Smal models, from a distance, 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 the order of MUNN & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents.

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A patentee may, at his option, have in his reissue a separate patent for each distinct part of the invention comprehended in his original application by paying the required fee in each case, and complying with the other requirements of the law, as in original applications. Address MUNN & Co. 37 Park Row, for full particulars.

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In order to apply for a patent in Canada, the applicant must furnish a model, specification and duplicate drawings, substantially the same as in applying for an American patent.

The patent may be taken out either for five years (government fee \$20) or for ten years (government fee \$40) or forfifteen years (government fee \$60). The five and ten year patents maybe extended to the term of fifteen years. The formalities for extension are simple and not expensive.

American inventions, even is already patented in this country, can be patented in Canada provided the American patent is notmore than one year

All persons who desire to take out patents in Canada are requested to communicate with MUNN & Co., 37 Park Row, N. Y., who will give prompt attention to the business and furnish full instruction.

Henry S. Cubberley and David Mann, Bloomington, Ill.-This invention consists in a frost proof jet, above which is a hollow standard surmounted by a movable bent tube. Within the standard is the valve rod, to the lower part of which is attached the valve. The rod continues on down below the latter and is encircled by a spring which forces the valve up against its seat. On the upper part of the valve rod is a rack, in which works a pinion, 0 connecting by suitable mechanism with a hand wheel outside. By this means the valve is opened or shut.

# Improved Harness Maker's Clamp.

Daniel Eighme, Chicago, Ill.-This invention relates to apparatus for holding leather in the operation of sewing it for harness or shoe making or other purposes. The stand is wedge-shaped, and on each of the inclined sides of the wedge there is a rib. There is also a shoulder on each side equal to the thickness of the lower end of the jaws. The innersides of the jaws are grooved for the ribs and fitted to the inclined sides of the wedge. The jaws are raised by pressing on a lever, and when raised are lowered and are spreadapart by aspring. Vertical springs draw the jaws down and hold them in their normal position, which is to tightly clamp the leather. The jaws act as levers, and turn slightly on their fulCrum rods when raised of lowered.

# Improved Spring Hinge.

William Hoar, Floyd, Iowa .- This improvement consists in attaching a standard to one leaf of a hinge, and connecting a spring encircled extension thereof with the pintle of the hinge. On opening, the spring is compressedso that the action of the same on the door produces the shutting of the latter, securing also at the same time sufficient resistance against the accidental blowing open by the wind or otherwise,

This is the closing inquiry in HOW TO

nearly every letter, describing BTA Jatents, some invention which comes to this office. A positive an-

swer canonly be had by presenting a complete application 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.

## How Can I Best Secure My Invention ?

This is an inquiry which one inventor naturally asks another, who has had some experience in obtaining patents. His answer generally is as follows. and correct:

Construct a neat model, not over a foot in any dimension-smaller if possible-and send by express, prepaid, addressed to MUNN & Co., 37 Park Row, New York, together with a description of its operation and merits. On receiptthereof, 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 | Patent Office,

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Persons desiring any patent issued from 1836 to November 26, 1867, can be supplied with official copies at a reasonable cost, the price depending upon the extent of drawings and length of specification.

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