

DECISIONS OF THE COURTS.

United States Circuit Court--District of Massachusetts.

BENJAMIN J. GREZLEY, COMPLAINANT IN EQUITY.

In the matter of Benjamin J. Grezley, for patent for IMPROVEMENT IN SUSPENDER STRAPS.—Decided December 14, 1873.

In two devices—each being a combined button hole and link—where the same elements, in the same relations, enter into the same combination, and operate in the same way separately, and as a combined device, the devices are the same.

Where the opening for receiving the button in each device was longer than the diameter of the button, the fact that in one the opening was elongated in a direction at right angles with the link, and in the other in a direction parallel with the link, was held to be a mere structural change.

Structural changes of form and proportion, although they improve the operation and produce a much better result, yet one of the same kind, are only different and better forms of embodying the same idea, and illustrate the difference between mechanical skill and inventive genius.

SHEPLEY, J.

This is an application for a patent for an alleged improvement in suspender straps. The application was filed in the Patent Office September 13, 1869, with two claims, which were rejected. On December 16 they were withdrawn and two others presented in lieu of them. These were rejected and drawn, and on the 23d of February, 1870, the present claims were presented. These claims were rejected by the Examiner February 28, and on appeal, by the Board of Examiners April 27, and by the Commissioner on appeal from the Board, September 17, 1870, and by the Supreme Court of the District of Columbia, on appeal from the Commissioner May 3, 1871.

The bill in equity in this case is filed under the provisions of the fifty-second section of the act of July 8, 1870, and is virtually an appeal from the decree of the Supreme Court of the District of Columbia rejecting the application for the patent.

The English patent of R. A. Brooman, granted in 1861, was cited in the record on the record.

The device of Grezley has, first, a link for attachment to the web; second, an enlarged body of the device for the insertion of the button; third, the loop at the bottom for retaining the button. Each one of these brands in the same relation to the others and performs the same function in Grezley's as in Brooman's device. The same elements enter in the same relations into the same combination, and they operate in the same way, separately, and as a combined device.

The Court held that the differences between the two devices are merely structural changes. Such structural changes of form and proportion, although they improve the operation without changing the mode of operation, and produce a much better result, but one of the same kind, are only different and better forms of embodying the same idea, and illustrate the difference between mechanical skill and inventive genius.

As compared with Brooman's invention, the complainant's device as a combined device is not a novel one, but possesses the same elements operating in the same way to produce the same result, and is not patentable. Bill dismissed.

[J. E. Maynard, for complainant. Marcus S. Hopkins, for Commissioner of Patents.]

NEW BOOKS AND PUBLICATIONS.

THE WORKSHOP for December contains a continuation of the paper on the "Vienna Exhibition in Connection with Art Industry." There are a number of fine wood engravings, of original designs in silver ware, frescoing, etc., together with hints and short paragraphs useful to the decorative artist. This magazine deserves much praise for its excellent typography and the constant variety of beautiful representations of the best productions of European industrial artists which it sets before its readers. Each number contains a large sheet of working drawings, from which many of the handsomest designs may be reproduced. Published by E. Steiger, Nos. 22 and 24 Frankfort street, New York. Subscription price, \$5.40 per year.

PURIFYING MIDDINGS is a subject which is now attracting considerable attention among millers in this country. Mr. Allen, an acting assistant examiner in the Patent Office, has published a small book, giving photo engravings, and the claims of existing United States patents and a brief digest of some foreign patents. Price \$25. Address all communications to DeWitt C. Allen, Room 97, Patent Office, Washington, D. C.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journals.]

From November 28 to December 8, 1873, inclusive.

- FINISHING FELTS.—J. F. Greene, Brooklyn, N. Y.
- FLASH LIGHT SIGNAL.—Rev. J. C. Nobles, Elmira, N. Y., et al.
- FORMING PIPE COUPLINGS.—M. Blakey, Etna, Pa.
- GRINDING CYLINDERS, ETC.—J. M. Poole, Wilmington, Del.
- HORSE COLLAR.—J. Heywood, Michigan.
- HULLING MILL.—V. Winters, Dayton, Ohio, et al.
- LAWN MOWER.—W. Sellers, Haverhill, Mass.
- MEN'S DRAWERS.—J. J. Fitz Patrick, Philadelphia, Pa.
- PRESERVING WOOD.—C. P. N. Weatherby (of New York city), London, Eng.
- PRINTING PRESS.—J. T. Ashley, Brooklyn, N. Y.
- PRINTING PRESS FEED.—J. T. Ashley, Brooklyn, N. Y.
- ROLLING MACHINERY.—J. J. Williams, Pittsburgh, Pa.
- SHIP'S ARMOR.—J. T. Parlour (of Brooklyn, N. Y.), London, England.
- STITCHING BOOKS.—E. D. Averell, New York city.
- STRETCHING HAT TIPS.—J. Sheldon (of N. Y. city), Edgley, Cheshire, Eng.
- TUCKER.—E. Bouillon, New Orleans, La.
- WELDING IRON, ETC.—J. Popping, New York city.

Value of Patents, AND HOW TO OBTAIN THEM.

Practical Hints to Inventors.

PROBABLY 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 are found to pay correspondingly well. The names of Blanchard, Morse, Bigelow, Colt, Ericsson, Howe, McCormick, Hoe, 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.

More than FIFTY THOUSAND inventors have availed themselves of the services of MUNN & Co. during the TWENTY-SIX years they have acted as solicitors and Publishers of the SCIENTIFIC AMERICAN. They stand at the head in this class of business; and their large corps of assistants, mostly selected from the ranks of the Patent Office: men capable of rendering the best service to the inventor, from the experience practically obtained while examiners in the Patent Office: enables MUNN & Co. to do everything appertaining to patents BETTER and CHEAPER than any other reliable agency.

HOW TO OBTAIN Patents

This is the closing inquiry in nearly every letter, describing some invention which comes to this office. A positive answer can only be had by presenting a complete application for a patent to the Commissioner of Patents. An application consists of a Model, Drawing, 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 receipt 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 is made with great care, among the models and patents at Washington, to ascertain whether the improvement presented is patentable.

Rejected Cases.

Rejected cases, or defective papers, remodeled for parties who have made applications for themselves, or through other agents. Terms moderate. Address MUNN & Co., stating particulars.

Caveats.

Persons desiring to file a caveat can have the papers prepared in the shortest time, by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & Co., 37 Park Row, New York.

Trademarks.

Any person or firm domiciled in the United States, or any firm or corporation residing in any foreign country where similar privileges are extended to citizens of the United States, may register their designs and obtain protection. This is very important to manufacturers in this country, and equally so to foreigners. For full particulars address MUNN & Co., 37 Park Row, New York.

To Make an Application for a Patent.

The applicant for a patent should furnish a model of 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 be securely packed, the inventor's name marked on them, and sent by express, prepaid. Small 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.

Reissues.

A reissue is granted to the original patentee, his heirs, or the assignees of the entire interest, when, by reason of an insufficient or defective specification, the original patent is invalid, provided the error has arisen from inadvertence, accident, or mistake, without any fraudulent or deceptive intention.

A patentee may, at his option, have in his reissue 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.

Design Patents.

Foreign designers and manufacturers, who send goods to this country may secure patents here upon their new patterns, and thus prevent others from fabricating or selling the same goods in this market.

A patent for a design may be granted to any person, whether citizen or alien, for any new and original design for a manufacture, bust, statue, alto relievo, or bas relief; any new and original design for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, pattern, print, or picture, to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture.

Design patents are equally as important to citizens as to foreigners. For full particulars send for pamphlet to MUNN & Co., 37 Park Row, New York.

Foreign Patents.

The population of Great Britain is 31,000,000; of France, 37,000,000; Belgium, 5,000,000; Austria, 36,000,000; Prussia, 40,000,000; and Russia, 70,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. A large share of all the patents secured in foreign countries by Americans are obtained through our Agency. Address MUNN & Co., 37 Park Row, New York. Circulars with full information of foreign patents, furnished free.

Value of Extended Patents.

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 were granted, we think more would avail themselves of the extension privilege. Patents granted prior to 1861 may be extended for seven years, for the benefit of the inventor, or of his heirs in case of the decease of the former, by due application to the Patent Office, ninety days before the termination of the patent. The extended time inures 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 be obtained to conduct the business before the Patent Office. Full information as to extensions may be had by addressing MUNN & Co., 37 Park Row.

Copies of Patents.

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.

Any patent issued since November 27, 1867, at which time the Patent Office commenced printing the drawings and specifications, may be had by remitting to this office \$1.

A copy of the claims of any patent issued since 1836 will be furnished for \$1.

When ordering copies, please remit for the same as above, and state name of patentee, title of invention, and date of patent. Address MUNN & Co., Patent Solicitors, 37 Park Row, New York city.

MUNN & Co. will be happy to see inventors in person, at their office, or to advise them by letter. In all cases, they may expect an honest opinion. For such consultations, opinions, and advice, no charge is made. Write plainly: do not use pencil, or pale ink; be brief.

All business committed to our care, and all consultations are kept secret and strictly confidential.

In all matters pertaining to patents, such as conducting interferences, procuring extensions, drawing assignments, examinations into the validity of patents, etc., special care and attention is given. For information, and for pamphlets of instruction and advice

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OFFICE IN WASHINGTON—Corner of F and 7th streets, opposite Patent Office.

Recent American and Foreign Patents.

Improved Extensible Brace for Supporting Trenches.
William Reilly, Newark, N. J.—This brace is designed as a substitute for the wood braces now used to stay the banks of deep cuts for sewers and the like; and it consists of a couple of strong screws screwed into a center piece from opposite directions, and having a large head, which are screwed in opposite directions against the sides of the bank so as to be adjusted, as to length, for ditches differing considerably in width.

Improved Package for Granulated Tobacco.
Goldsborough Robinson, Louisville, Ky.—This invention relates to the material which is employed to form wrappers for smoking tobacco, and consists in the application of the leaves of corn shucks for that purpose. Around the usual jacket or packet in which the cut tobacco is placed, a series of leaves are wrapped spirally, the second binding the first and the third the second. They are folded over at the ends, provided with a tie ribbon, and then sealed at each end. The leaves of the corn shuck possess a water-repellent property and a flexibility which make them even preferable to paper, foil or cotton.

Improved Gas Cock.

Eugene M. Morris, Baltimore, Md.—This invention relates to the gas cock which conjoins the meter and service pipe of a building, and consists in novel means of insuring a perfect drip of the water which remains after the gas is shut off and which results from condensation of aqueous vapor. As soon as the valve is closed in order to shut off the gas, any liquid in the valve chamber immediately descends through a tube into the drip vessel, whence it can be drawn off at suitable intervals by the removal of the screw. By this device there is no opportunity afforded, to the matters held in solution by water, to remain in the valve chamber and make a deposit which will work in between the tube and bottom, or for the water in the bottom of the valve chamber to freeze about the tube.

Improved Plastering Machine.

Gustavus Stevens and James H. Watson, Tawas City, Mich.—This invention relates to plastering the walls of buildings, and consists in a machine so constructed and organized as to lay on and spread the mortar at one operation, thereby greatly economizing time, doing the work uniformly well, and greatly lessening the ordinary cost.

Improved Grain Cleaver.

William Houghton, Great Grimsby, England.—The grain is supplied to a first separator sieve, which retains all stones or matters larger than the grain, whence it passes on to the second separator, which removes loose dust and small seeds, both separators being mounted and operated from a crank, in the ordinary manner. The grain passing over the second separator is delivered through a chute into a spout, whence it meets an upward current of air, which, passing through it as it falls, removes any loose smut balls and other light impurities before the grain enters the scourer. The air current carries the impurities into the upper exhaust box, in which a curtain is placed, together with a damper, which may be closed, more or less, as required, to cause the heavier particles to be deposited in a box, while only the very light dust is carried on to the fan. The grain being fed to the scourer is subjected to the action of the beaters, which throw it off against the steel clothing of the cylinder, whereby the adhering smut is detached, the resulting dust being carried away by the air draft through the perforations in the cylinder to the fan by side passages. The grain gradually passes down through the scourer to the bottom, whence it escapes by the exit, which carries it into a second exhaust spout, where, as it falls, it is again subjected to a current of air, whereby the remaining impurities are separated and carried upward into a second exhaust box, in which the heavier particles, consisting principally of unsound grain, are deposited, the remainder passing on to the fan. There is a spout through which the grain is passed directly into the exit when it is desired only to separate and clean it without subjecting it to the action of the scourer, and a valve which closes the passage to the scourer and opens said spout.

Improved Machine for Riving Shingles.

Charles Sheltonandine, Jefferson, N. Y.—The object of this invention is to provide a machine by which shingle, stave, and heading bolts can be rapidly and economically rived into blanks; and it consists of two or more sets of movable knives or blades, a set of stationary ones, and a movable table, and operating devices for the table and the movable knives, all combined and arranged so that a bolt put on the table under the knives will be forced against the stationary knives and split on the sides to remove the spalt; then a set of movable knives will move down and split the block into two or more pieces; and then the next set will operate in the same way, and complete the operation by successive actions, which are necessary in order that the knives will not bind in the block, as they would if the whole gang were forced through it simultaneously.

Improved Harvester Rake.

Edward Lippoldt, Brighton, Ill.—The main features of the rake, its form and manner of operation, do not differ from rakes already in use, and the invention applies exclusively to the rake arm, which is made to sweep over the apron of the machine in the usual manner. The common rake arm is ordinarily so rigid that it is very liable to be broken, and thereby occasion trouble and delay. This difficulty is remedied by making it in two parts, and connecting the parts together by a hinge, a wing being attached to one part. A spring bar bears against the wing, and a bow spring rests against a projection in the hinge. When the arm is forced back by the strain upon it, it is forced against the power of the spring, and the back motion ceases when the spring becomes straightened, so that its center strikes the spring bar. When the pressure against the arm ceases, the spring bar throws it to its normal position.

Improved Safety Pocket Attachment.

Richard L. Russell, Brooklyn, N. Y., assignor to Joseph W. Robbins, who may be addressed for information concerning the purchase of rights, P. O. Box 830, New York city.—This invention consists of a little spring-actuated hook combined with thin plates of metal, having a round notch in the edge so that a watch chain, dropping into the notch when the book is pushed back, will be confined in said notch by the hook when let go. The plates are adapted to be sewn or otherwise fastened to the pocket lid of a vest or other side pocket, so that the chain will naturally drop into the notch when the watch is put in the pocket, and thus be secured. The watch cannot then be pulled out without attracting the notice of the owner. Any other object—say, a pocket book—may be secured the same way by being attached to the chain. The device is also useful for fastening the pantaloons pocket in connection with a short chain, the latter being connected to the pantaloons, by one end, at the top of the pocket, and the end with the button being fastened in the notch of the plate by the hook, said plate and hook being fastened in or on the lid of the pocket. A little projection of the hook rises up through or above the pocket lid sufficiently to apply the thumb or finger so as to push it back readily when it is desirable to release the chain to get the watch or to open the pocket.

Improved Fire Extinguishing Water Pipe Attachment.

Thomas Miller, New York city.—This invention consists in attaching climbing pins to the standing pipe of a building so as to make it available for a fire escape. They may either be tapped directly into the pipe, or into collars, clamped on.

Improved Refrigerator.

Erastus S. Root, Providence, R. I.—This invention is an improvement in the class of domestic refrigerators in which the food chambers are arranged around a central ice or cooling chamber. The improvement consists in the construction of the cooler, to be placed within the ordinary rectangular tin lined box, and which has a central space provided with shelves and surrounded by a concentric chamber which is filled with small lumps of ice. This chamber is partly surrounded at its upper half by the other segmental concentric chambers, which are also filled with lumps of ice. The inner chamber serves mainly to keep the central space cool, besides cooling with its lower surface the outer box, while the upper segmental chambers are more especially designed to keep the box at the required temperature.

Improved Railway Switch.

William A. Slingerland, New York city.—One pair of short tracks has switch rails pivoted at one end, and frogs placed at the other; and another pair of tracks has the switch rails at one end, and the frog rails at the other; while a third pair of tracks has switch rails at one end, and turned frog rails at the other. These three switch rails are all pivoted on the same stationary plate and a movable one in the usual manner. By placing these parts in this relation to each other, every train moving one way is compelled to take the middle rails, which always connect with the main or side track while a train moving in the opposite direction from either track will pass to frog rails or the turn-in rails; hence, under no circumstances can a train be claimed, be accidentally thrown from the track by the carelessness of the switch tender.

Improved Adjustable Hat.

I. Ygnacio Cassiano, San Antonio, Texas.—To the hat, of any approved pattern, is applied at the inside, near its connection with the brim, a band arranged in four parts of concave shape to correspond to the shape of the head, with interstices of suitable size separating the parts. It is slotted to be produced as light as possible, and covered with the perforated leather. Each part of band is provided with one or more band springs, of brass or other material, bent in U shape, which springs are attached with their other legs in suitable manner to the body of hat. A wedge-shaped piece of cork or other material is introduced between the legs of the band spring, which wedge is pushed up or down as it is desired to make the hat larger or smaller.

Improved Corn Coverer.

Joel A. Moore, Salem, N. J.—Suitable handles guide the coverer and control the thickness of the layer of earth to be placed over the seed. A front roller serves to loosen the earth and crush the clods. The hoes are rigidly applied to a lateral piece of the frame, made of oblong shape, and placed under suitable angle toward the longitudinal axis of the coverer, by means of which the earth is thrown over the corn to cover the same, forming, also, a ridge or elevation, which is then spread out level with the hind roller. The quantity of earth to be thrown by the hoes over the seed may be regulated as the soil or circumstances require it, the roller yielding freely to the pressure exerted on the handles.

Improved Refrigerator.

Richard Armker, Baltimore, Md.—This invention is a refrigerator so constructed that the ice water can be utilized for cooling the provision chamber. The ice chamber is formed in one part of the top of an inner box, and the bottom of which is made inclined, so that the ice water may flow off as fast as the ice melts. The ice water tank is also placed in the upper part of the inner box, but at a lower level than the ice chamber, so that the ice water may be received and held in the said tank as it drips from the said ice chamber. In the space above the ice water tank is secured a pan in which articles to be kept cool are placed, and which is made detachable, to allow the water tank to be conveniently cleaned. In the space below the ice chamber and water tank are placed shelves of perforated sheet metal or wire rods, to receive the articles to be kept cool.

Improved Milk Cooler.

Charles A. Douglas, Franklin, N. Y.—This invention consists in protecting the metal water pan of a milk cooler by a paper, felt, or other non-conducting cover or envelope for the bottom and sides, to prevent the cold water running through it for cooling the milk pan from taking up the heat of the atmosphere from the outside, the said paper or other non-conducting cover being held up to it by any suitable frame or support.

Improved Bale Tie.

Landon Carter, Huntsville, Ala.—In connection with a block and a clip or socket piece, both attached to one end of the band, and having flanges bent inward over the latter, it is proposed to employ a wedge, which is cut away or shouldered on its under side to adapt it to be inserted in the clip or socket piece, so as to bend and clamp the free end of the band.

Improved Fly Trap.

Herman L. Chapman, Marcellus, Mich.—A tin casing forms two sides and the top of the trap, and is open at the bottom. Laterally connecting tin troughs are soldered to the sides of casing and contain soap suds, in which the flies get killed. Feet of sufficient height to admit the flies below the trough and the sides of the trap are provided at the bottom parts of troughs. The open sides of the trough along the trap are closed by sliding glass panes, which may be easily taken out and which fit closely to the sides of the troughs so that no fly can escape. The bait is placed inside the casing, the bottom opening of which is shaded more or less by the tin casing, so that the flies, after once being in the trap, do not crawl out the same way, but fly to the light toward the glass panes, and get drowned in the troughs.

Improved Flower Maker's Grass Cutting Machine.

Theophilus Millot and James Millot, New York city.—This invention consists of a cutting board and a shifting guide for it, combined with a cutting machine of the kind commonly used for cutting paper, so that the pack of cloth pieces to be slit and cut off in bunches, being clamped to said board, may be led along under the cutting blade, in the ordinary way, for slitting, and then shifted laterally for cutting off the bunches of grass blades. The invention also consists of a point-trimming blade, arranged on a movable support, so that it can be operated to bevel the corner of the pack of the cloth pieces while said pack is in the position for the cutting off and slitting blade to act, and which said support is so arranged that, when the slitting blade moves down, an inclined plane thereon will move the point cutter out of the way.

Improved Balanced Slide Valve.

Charles H. Hutchinson, Concord, N. H.—On top of the valve is a short cylinder. The balancing part works steam tight against the steam chest top, and said top works up and down within the cylinder. The part working against the steam chest face excludes the steam from the top of the valve and, therefore, relieves it of so much down pressure as is due to the area on said valve from which it excludes the steam. It is held up to said face by the steam pressure on shoulders.

Improved Tilting Stand for Carboys.

Abner W. Caverly, New York city.—This invention consists of a tilting or rocking stand for tilting carboys when pouring out the contents: the object being to enable the operator to turn the carboys both down and up with a gentle and regular motion, so that the acid will not be spilled or forcibly ejected by the swashing of it by the irregular and sudden motions common to the ordinary way of handling carboys. The stand, being left to itself, will remain upright with the carboy on it.

Improved Door Latch.

Frank Stowe, Huron, O.—A recess is cut into the ordinary bolt of a door latch, which is deeper near the projecting part of the same. A dog is provided with a socket having a rubber cushion, and at its lower end with a lug, which projects under the bolt, sliding along the recess as the bolt is moved in either direction. A band spring is applied, with one end secured to the outer plate of the latch, while its other end presses firmly on the dog and lug. The socket part of the dog slides between a casing of the cover plate and the side face plate of the latch. The rubber cushion projects beyond the casing and the door, when the bolt is drawn back by the knob and the lug locks the bolt in position inside of the face plate. On closing the door, the cushion strikes noiselessly against the jamb of the door, the dog forces the spring back, releasing the lug from the wider part of the recess causing it to slide along its narrower part, and allow, thereby, the bolt to lock into the catch plate without necessitating the forcing back of the bolt by the same. The grating noise incident to the friction of the bolt on the catch plate, as well as that caused by slamming the door, is almost entirely done away with.

Improved Game Table.

Robert R. Crawford, Wytheville, Va.—This invention is an improved game table, called the "Dexter Table," and which is between a bagatelle table and a ten pin alley, having some of the characteristics of each, and upon which various games may be played. In playing, the pins are placed upon numbered spots upon the forward end of the platforms, and a ball is placed upon the rear part of said platforms and struck with a cue, the object being to knock the pins from their places. Numbers placed at the sides of the spots from which the pins are knocked are added, and their sum is considered the number of points made.

Improved Adjustable Blackboard.

Peter W. Moeller, New York city.—This invention is a blackboard for use in schools and other places, so constructed that it may be raised and lowered to adjust it to the height of the person using it, and according to the part of the board to be used. One part of the board, when filled, may be raised and the operation continued upon the other part. The invention consists in the combination of two blackboards and a suspension cord with a frame, grooved upon the inner surfaces of its side bars to receive the edges of the said blackboards, and in grooves of one of the side bars of the frame, made deeper in their lower parts to enable the boards to be removed and turned.

Improved Hand Cultivator.

Amos W. Ross, Northfield, Mass.—The two wheels revolve upon the journals of the axle, to which are secured the handles which are connected by a cross bar which serves to operate the machine. Guards are provided, designed to prevent the plants, when small, from being covered or injured by the soil thrown by the plows. The plows may be adjusted wider apart or closer together, or readily attached or detached as may be required. One plow is made with a projecting arm upon the upper part of one of its side edges, to smooth off the soil in forming the hills.

Improved Combined Stubble Shaver and Scraper.

Henry Von Phul, Jr., and James Mallon, Holly Wood, La.—This invention is for grubbing or shaving and scraping sugar cane stubble. The vertical side frames are rounded up to adapt them to serve as runners, and have shoes attached to them, which, at the front ends of the frames, are extended upward, and are attached to the top bars of said frames. The knives are bolted to the horizontal arms of angular bars, and have an edge formed upon both of their side edges, so that when one edge becomes dull the knives may be detached and reversed. The bars are so formed that their horizontal arms may incline to the rearward to bring the knives into a good working position. Suitable construction enables the knives to be conveniently raised and lowered, as desired; and by another arrangement the knives and a scraper are raised and lowered at the same time and by the same operation. Guards are attached to the frames to overlap the inner ends of the knives and prevent them from becoming choked with stubble or other rubbish. A cutter is also provided, the shank of which is designed to split the ridge in advance of the knives and scraper to enable them to operate more easily and with better effect.

Improved Plow.

Richard A. Brown, Oakland, Miss.—The plow has a rear land side extension, and is secured to the foot of the standard, and the latter is connected with the beam by tenon and mortise (the former having a rounded shoulder), so that it may be adjusted in a vertical plane at a greater or less pitch or angle to the beam. A forward inclined brace rod is connected with the standard, and passes through the beam. A similar rod, having nearly the same inclination as the standard, is pivoted to the land side extension, and passes through the rear end of the beam. The upper ends of the brace rods are screw-threaded, and nuts are applied thereto, so that by adjusting them the lower end of the standard, and with it the plow, can be moved forward or back to vary the pitch of the latter, and thereby govern the depth to which it will enter the soil. By this arrangement of parts the pitch of the plow is readily varied; and it is so braced by the rod that only an ordinary screw bolt is requisite to secure it to the standard, and the latter does not require to be specially strong or of peculiar form. The implement is designed for use mainly as a furrowing and barring off plow.

Improved Spoke Setting Machine.

William R. Greene, Juda, Wis.—The main frame of the machine consists of a base frame and vertical standards, which are laterally connected by a top piece. Inclined braces carry laterally a detachable shaft, on which the hubs are keyed for spoke setting and other operations, and which is connected by suitable gearing with a treadle mechanism. The spoke setting mechanism consists of two vertical recessed guide pieces, in which slides a lateral setting frame, which is carried up and down by the action of a screw bolt, and actuated by suitable gear wheels. The setting frame consists of a strong top piece, with a socket for the screw bolt, sliding pieces and bifurcated clamps, which are pivoted to the lower ends of slide pieces. The clamps carry, in connection with a pin, a sleeve of cast iron, into which the spokes are firmly placed for setting into the hub. The slide flanges of the sleeve are of wedge shape, and are embraced by the prongs of clamps, which rigidly hold the sleeve in position. The upper lug-shaped end of the sleeve is introduced into a recess and adjusted there to the inclination under which the spokes are to be set into the hub. The frame slides with the sleeve down toward the hub, which is adjusted in position for it, and sets each spoke with accuracy and dispatch. On the return of the frame horizontally projecting rods force the clamps upward, so that another spoke may be inserted. The spokes are then ready to be tenoned at their outer ends, which is accomplished by a suitably arranged burr. After all the spokes are tenoned at their outer ends, the felles are put on, and the wheel is lastly turned by the treadle mechanism, and the sides of the felles and the edge of the same produced as nearly round as possible.

Improved Carriage Wheel.

Henry Gwynn, Baltimore, Md.—This invention relates to the construction of carriage wheels, so that they may combine the requisite strength with less weight and cost. It consists in a journal box made of wood, in sections, with wedge-shaped projections and with suitable flanges.

Improved Tool Holder.

Lewis Reder, Wilmington, Del.—This invention relates to tool holders for lathes, and consists in combining therewith a washer and shoe having corresponding inclines.

Improved Spark Arrester.

Gustaf Swenson, Hackensack, N. J., assigns to himself and Peter Bogart Jr., of same place.—This invention relates to the arrangement of devices within the hood of the smoke stack, for directing the course of the air and products of combustion entering and passing through the same. Tapering pipes are attached, larger ends upward, to the opposite sides of the upper part of the stack, and are extended downward as close to the roadway as possible. The upper ends of the pipes and stack are covered with a hood, which is made in the form of a double cone. In the forward side of the lower part of the hood are formed two holes, in which are inserted two flaring tubes. Within the hood, and in front of the upper end of the stack and guide spout, is placed a plate to form a passage leading to the upper part of the hood. By this arrangement the tubes and the plate, as the locomotive moves forward, gather the air and discharge it through the upper end of the hood, so as to increase the draft through the smoke stack, and thus counteract any tendency of the guide spout to check the draft.

Improved Revolving Sample Case.

John F. Randolph, Edwardsburg, Mich.—This invention is an improved revolving show case formed of a polygonal base with vertical partitions arranged radially around the shaft, and triangular removable trays, supported between said partitions in an inclined position by side and front strips.

Improved Process of Manufacturing Paper from Grains.

Charles V. Stehlin and Joseph Stehlin, New York city, and Heinrich A. Haan, Brooklyn, N. Y.—The object of this invention is to utilize the residue of the malt, after the process of brewing, for the purpose of producing the short fibers of the same and applying them to the manufacture of paper. The barley grains and hops, as received from the breweries, are thoroughly soaked in water to a mashy consistency and carried over a guide frame of wire gauze through rollers, which press and bruise them, and partly separate the starchy substances from the fibers. The fibrous parts are carried on over the guide frame. The starch dissolved in water passes through the wire gauze into suitable receptacles, and is carried off for condensation and extraction. The fibrous parts are submitted to a thorough mashing process, and then carried over a wire sieve, so that the watery solution of the starch may flow off. The hops are treated in a similar manner, with the exception of the rolling process, as the fibers of the hops are of such thin structure that the pressure of the rollers would injure them. The fibers thus obtained are macerated in a solution of caustic lyes. A pulpy mass is gradually obtained, which, after being bleached by chlorine, may be manufactured directly, or by mixture with other fibers, into the different sorts of paper as desired.

Improved Nut Lock.

William H. Bowman, London, O.—This invention is an edge-perforated washer, connected and turning only with the bolt, and projecting laterally beyond the nut or nuts, combined with pins to lock the latter.

Improved Fastener for Meeting Rails of Sashes.

Edward Burstow, Horsham, Eng.; office in New York, 651 Broadway.—This invention relates to the ordinary sash fastener which prevents the window from being opened, and consists in a hinged plate, combined with the sash fastener to turn down over the opening between the sashes whenever they are locked. This is the most perfect sash fastener that has come before this office for some time.

Improved Car Coupling.

Thomas Andress, Auroville, Wis.—The invention consists in the arrangement of the coupling pins with spring slides, which are disconnected from the draw bars by suitable treadle mechanism, and produce the coupling of the links by the simultaneous action of rods attached to the drawbars and coupling links on intermediate pivoted levers.

Improved Car Coupling.

Samuel Reed, Liberty, Pa.—This invention consists of a drawbar or coupling box, with side parts hinged to the rear part, and connected firmly by a hook frame, which is detached by the coupling link in case of accident, and produces the giving way of the sides and the uncoupling of the link. The coupling pin is hinged to a frame, with lever, latch, and gate, of which the latter is struck by the link, carrying the pin down for coupling. For uncoupling, the lever is raised, which detaches the link.

Improved Plow.

William T. Shipp, Charles J. Peterson, and Robason L. McLurd, Brevard Station, N. C.—This invention is a plow adapted for ready adjustment to run at different depths in the soil, by changing the angle or inclination of the standard and shoe or shovel to the beam, also of the share or shovel to the standard.

Improved Vehicle.

Martin V. Nichols, Osage, Iowa.—The wheels and frames bear against superposed springs and are placed within the sides of the carriage body. They are incased upon the inner side, no part of the wheels being in sight, except the part that projects beneath the body of the carriage. The forward end of the carriage is supported upon a single small wheel, or two small wheels placed close together, and the ends of the journal of which rest upon a frame. To the frame is attached a spindle which enters a socket attached to the front platform of the car body, and in which is placed a coiled spring. To the forward end of the frame is jointed the tongue, and to its rear end are pivoted two guide rollers, between which passes the semicircular guide rod, the ends of which are attached to the forward end of the carriage body. In the upper forward part of the carriage body is a box containing an endless strip passing over rollers. The driver can readily adjust this strip; and as suitable names are printed upon it, he can thus enable the passengers to know what street will be crossed next.

Improved Wood Sawing Machine.

John Skinner, Stockwell, Ind.—This invention consists of a saw frame of a power sawing machine, suspended by a couple of swing bars, one of which is connected to an arm which is capable of rising and falling, and is provided with a lever by which the saws lifted up and let down, as required, in the progress of the work. The lever is arranged to be manipulated by the operator while in the position for turning the crank. The invention also consists of a saw bench for receiving the piece cut off, arranged on a pivot and connected by an arm and rod with a hand lever, so that the attendant can throw off the piece by a quick movement of the lever while standing at the place for attending to the driving gear and the saw-adjusting lever.

Machine for Removing Snow and Ice from Roadways.

Charles G. Waterbury, New York city.—This invention consists of apparatus in a portable machine adapted to run along the roadway, so contrived that it will sprinkle the surface of the roadway with hydrocarbon substances, at the same time converting some of the said substances into vapor and burning it in a space above, and causing the flame to impinge upon the surface and burn the portion sprinkled thereon directly in contact with the snow and ice.

Improved Hominy Mill.

Jacob L. Toner, Edinburg, Ind.—The corn is admitted to the mill through a hopper, and is immediately subjected to the action of the teeth of a rapidly revolving cylinder, whereby the hulls and hearts of the kernels are knocked off and separated from the corn. The kernels of corn are also broken more or less, and dust and meal are made from the fragments which are thrown, by centrifugal force of the revolving cylinder, through the perforations of the casing, leaving the hominy clean and free from dust.

Improved Subsoil Plow.

John R. Turner and Jacob Jacobs, Fredericktown, Mo.—This invention is a subsoil plow so constructed as to run easily and steadily through the hardest soil, and loosen it thoroughly. The standard curves forward as it projects downward, and is made thin, with its forward edge sharp, to enable it to pass readily through the ground. The base of the cutter is made with a bar extending to the rearward. Upon the under side of the bar is formed a notch or recess, into which is fitted the convex upper side of the shovel, which is securely bolted to said bar. With this construction, as the plow is drawn through the ground, the shovel loosens the soil and breaks it up, leaving it light and loose without removing it from its place.

Improved Folding Pail.

Abellard Du Chateau and John D. Williams, Green Bay, Wis.—This invention consists of a folding pail composed of an India rubber or other suitable elastic tube for the body, a metal hoop or band at the top and bottom, a wood, rubber, or other suitable bottom, and brace rods connecting the top and bottom hoops. These rods are jointed to the hoops and jointed together, so that, when the pail is to be used, they can be extended to extend the tube, and will hold it in the extended condition. They can also be folded down so as to fold the tube into a small, flat, compact package for convenience in carrying it in a wagon for use in watering horses and the like. The brace rods are arranged on the outside of the tube, and connected to the upper hoop by the same connection by which the ball is attached, and so suspend the weight directly from the ball.

Improved Furnace for Desulphurizing Ores.

Edward C. Hegler and Frederick W. Matthiesen, La Salle, Ill.—This invention relates to a new construction of the vertical shaft furnace for desulphurizing, calcining, and drying, in the same, ores or other substances, when in a fine or powdered state. Vertical series of inclined plates form troughs, from the bottom of the furnace to the top. When the inclined plate or trough at the bottom of the column is empty, the ore of the trough next above it flows down into it until it is filled, and this process takes place along the whole column of inclined plates or troughs to the top of the furnace, where the reservoir is placed. The removal of the ore from the bottom trough causes a simultaneous movement of the ore from each trough above to the one below, and a sliding of the ore takes place along the whole column to the top reservoir of the furnace, and from the reservoir into the uppermost trough, and this movement is arrested or made continuous, just as the bottom trough is allowed to remain full or be emptied. The inclined plates are also so constructed as to allow the passage of the ascending heated gases under and next to the column of ore, where the heat is applied most effectually in contact with the ore in the trough. Finally, the invention consists in a modification of the position of the plates with the use of conduits or pockets along the inner walls of the furnace for conveying the gases, from one horizontal passage to the other, around and over the several layers of ore.

Improved Fire Indicator and Alarm.

John Fawcett, East Boston, Mass.—This invention consists of a little cage of wire or perforated sheet metal containing a card of matches, or other easily ignitable substance, arranged under a string holding a trip lever, with which a wire is connected. The wire extends to the indicator and alarm in the office or occupied room of the building, and is attached to a wheel, which, when let free by the burning of the string in the aforesaid cage, is turned by a spring, and caused to trip the mechanism of an alarm apparatus, and at the same time present to the sight hole through the case the number of the room in which the cage is fired. Any number of the detectors can be arranged in a room, in different points, and connected with the indicator and alarm.

Improved Walk Edger.

Isaac V. Brower and Joseph C. Higgins, Millstone, N. J.—The object of this invention is to provide convenient means for edging walks in yards and lawns, cutting turf straight and square for that or other purposes; and it consists in an axle, at one end of which is an ordinary wheel which runs upon the surface of the walk. At the other end is a drum which runs upon the turf. A circular cutter, made of thin steel, is attached to the end of the drum, and a plowshare follows the cutter and reverses the sod as the latter is cut. A gate is attached to the plow beam for regulating the depth of the plow.