

We are indebted to the Hon. Martin F. Hatch, U. S. Consul at Merida, Yucatan, for a copy of a local newspaper—*La Razon del Pueblo*—containing an account of “An Astonishing Motor,” the invention of a young Mexican named Gonzalez. The Mexican editor is of opinion that the invention is of such extraordinary value that its mere fame will make Mexico great among the nations. The new motor, he says, enables mankind to navigate the air in the teeth of hurricanes blowing at the rate of three hundred miles an hour. It permits of locomotion over the earth or under the surface of the sea, in all directions, with inconceivable velocity. We regret to say, however, that, after giving us a column and a half upon the various wonderful capabilities of the new invention, the editor fails to present any clue to the principles or construction of the device. The only light given upon this point is that the use of the invention involves no expense, not even the employment of hand power, nor steam, nor air power, nor electricity. The inventor has put into operation an example of the device in the form of a small boat, hermetically sealed, which goes and moves in any desired direction under water, at any desired speed, as if guided by an invisible hand. The editor does not hesitate to say that it is the most astonishing work that, up to the present day, has ever been produced in the world. The many

By the soundings of John McKinney, an experienced navigator and old resident in the vicinity of Lake Tahoe, Cal., the greatest depth of that remarkable body of water is found to be 1,645 feet.

PATENT OFFICE DECISIONS.

PATENT VENEER CUTTER EXTENSION

The question of adequacy of remuneration is the only remaining one. The diligence of the applicant has been exemplary, and his success remarkable. The profit he has derived from this invention is large, even taking it at his own estimate. But nearly doubling it, as the remonstrants do in their estimate, which is not without some reasonable basis, it is unusually large, reaching nearly \$15,000. The amount of money, however, which an inventor receives is not the criterion of the value of his invention, or of his deserving an extension, except as it corresponds to the labor and expense incurred by him and the ascertained value of the invention to the public. The mere fact that a great profit has been realized is not a sufficient reason for refusing an extension, if the sum is disproportionate to the public benefits derived from the invention through the labors of the inventor. Although the remuneration of this applicant is admitted by him to have been about \$30,000, the advantage of his device to the public has been so many times the amount that I should not be warranted in holding him adequately remunerated.

The extension will be granted upon a disclaimer of the second claim and payment of the required fee in accordance with official rules.

DECISIONS OF THE COURTS.

**United States Circuit Court--Southern District of
New York.**

[In Equity—Before Woodruff, Judge.]

WOODRUFF, J.:

On the 20th of September, 1853, Philo Sylla and Augustus Adams received Letters Patent from the United States for an improvement in the presser. On or about the 17th of May, 1859, on surrender of the said patent, new letters were issued to C. Aultman & Co., assignees, intended severally to cover different parts of the same invention, or different devices included in the original machine. These issues were numbered, respectively, 721, 722, 723, 724, 725, and 726. Thereafter reissue numbered 722 was assigned to the original alleged inventor, was by them surrendered, and on the 14th of May, 1867, new Letters Patent were issued to them, professing for the same invention, and numbered reissue in numbered 2,606. The several reissued patents numbered 2,603, 724, 721, and 726, were, on the 19th of September, 1867, extended for seven years from the expiration of the original terms—namely, to the 20th of September, 1874, and by assignment from the original patentees the title thereto is vested in the complainant in this suit, who charges the defendants with an infringement of these extended reissued patents. The defendants have raised the preliminary objection that the suit is defective for want of necessary parties; and on the merits they contend that the original patent is void, because the several reissued patents that the reissued patents are void, because they "are not for the same invention as the original patent from which they have sprung, but claim substantial and material matters not indicated, suggested, or described in that or original patent;" that if the reissued patents embrace no devices but such as are shown or suggested in the record of the original, or if they can be sustained so far as to embrace what is shown in such original and nothing more, then the defendants' machine is an infringement; and, as to the original patent, they contend that it is defective in its specification and model, in any particular in which the defendants can be deemed to use any device or devices shown therein, was not new when such original patent was granted.

The court held substantially as follows: Under an agreement between the owners of conflicting patents, which defined their respective rights and provided a fund for maintaining them and for purchasing as joint property patents deemed necessary for their mutual protection, a patent does not pass which had been previously assigned by one of the owners to a third person, when assigned to the original inventors, and after having been extended, was reassigned to the same party.

Such an agreement would operate at most as a license to all the parties to use a patent owned by one of the individuals composing one of them; and he alone could maintain a suit at law upon it, and the others need not join.

It is no objection to a suit brought upon an extended patent that the exclusive right under the original term for the territory where the infringements were perpetrated had been assigned to third parties, unless it appears that the extended term was embraced in the assignment.

that the extended term was embraced in the assignment. The court said that the word "harvester" in a harvester "with the hinged by which it is drawn arranged above the plane of the cutter" is not enlarged because a description of a machine in which that combination is shown to be practicable is interpolated in the specification upon a release, neither is the patent invalidated.

A release under patent is valid although the description of a machine to which the invention is related is substituted in the specification for the purpose of illustration instead of the description of another contained in the original, which was so imperfect that it failed to show the application.

Where a reissued patent claimed a feature which was not described in the original specification nor clearly shown in the drawings, and the model was so injured as to furnish no evidence respecting it, it was held on other proof that the model originally contained the disputed feature, and the patent was held valid.

The devices employed in abortive and abandoned experiments do not become public property, and are no bar to a patent embracing them obtained by an independent and successful inventor after ward.

A claim for the combination of a stop to prevent the finger beam of a harvester from falling too low with the mechanism for connecting it with the main frame, and allowing it to rise and fall, is not infringed by a machine so constructed as to require no such stop, and having none.

The gist of Sylla and Adams' invention, patented September 20, 1853, consisted in attaching the finger bar to the frame of a mower and reaper by a coupling bar which, at one end, to the frame or near the crank shaft, by which the sickle bar is operated, so that the end of the pitman attached to the sickle bar oscillates in nearly the same arc of a circle as the inner end of the finger bar; and their reissued patents of May 14, 1867, are infringed by any machine using that construction, however differently formed in other respects.

George Harding, for complainants.
Henry Baldwin Jr., and Benjamin F. Thurston, for defendants.

NEW BOOKS AND PUBLICATIONS.

THE PREPARATION AND MOUNTING OF MICROSCOPIC OBJECTS. By Thomas Davies. Enlarged second edition, edited by Professor John Mathews. New York: G. P. Putnam's Sons, 23d street, corner of Fourth avenue.

Any one who desires to become skillful in this most delicate species of handicraft, will find instructions here that are of undoubted value. The work was originally written for the help of students in microscopy. It contains the concise directions pertaining to every branch of the subject, derived from the experiences of the most eminent practitioners of the art. It shows what substances are to be employed to give transparency to this or that tissue, what coloring material will render desired parts more conspicuous, what will harden the soft membrane, or soften the hard. It describes the various solvents of various objects, shows how to clean them, how to cut, treat, place, and secure. Shows the uses of polarized light, and the changes which the same object, prepared by different methods, exhibits. In short, there is hardly a point in the whole range of the art of microscopic preparation that is not here explained. Not only those who wish to learn, but all who have acquired dexterity in the art, will find useful instruction in this book.

HALF-HOURS WITH THE MICROSCOPE. By Edwin Lankester, M.D. Illustrated by Tuffen West. Explanation of the Polariscopes by F. Kitton. New York: G. P. Putnam's Sons, Fourth avenue, corner of 23d street.

This little volume is intended as a popular guide to the microscope, as a means of amusement and instruction. It most admirably fulfils its purpose. It is crowded with useful and practical information. We think it would be difficult to find elsewhere, in the same compass, so much microscopic instruction so clearly set forth. Beginning with an explanation of the construction of the simpler forms of the instruments, it goes on to those of more complicated structure, shows the arrangement of the lenses, the combinations of the binocular attachment, the various diaphragms, *camera lucida* for drawing the magnified objects, with explanations of sundry other tools and devices.

The chapter entitled "A Half-hour with Polarized Light" gives a clear and easy explanation of this curious subject. Instructions are given by which any person of intelligence may construct a practical polariscope of bits of thin glass, at the cost of a few cents. A list of various crystallizations, for the production of the most peculiar forms and gorgeous colors seen under the polariscope, is given, with directions for their preparation—all of comparatively simple nature.

The chapter, "A Half-hour with the Microscope in the Garden," describes some of the extraordinary and magnificent things that may be seen close at home. Plates delineating the forms of some two hundred of these wonderful things are given, including the structure of garden plants, berries, flowers, and vegetables, showing formations of astonishing beauty. Then follow: "A Half-hour with the Microscope in the Country," "A Half-hour at the Ponds," "A Half-hour at the Seaside," "A Half-hour Indoors," each chapter being illustrated with pictures of the many strange and interesting objects that are mentioned. The book closes with an appendix, by Thomas Ketteringham, upon the preparation and mounting of microscopic objects. The frontispiece is a beautifully executed plate, in colors, of splendid polariscope objects. Some ten thousand copies of this little work have been sold in England, which is an indication that its intrinsic merits are equal to any thing that might be said in its praise.

FREE HAND DRAWING: a Guide to Ornamental, Figure, and Landscape Drawing. By an Art Student. 50 cents. New York: D. Van Nostrand.

Recent American and Foreign Patents.

Improved Artificial Stone.

Ernest L. Ransome, 10 Bush street, San Francisco, Cal.—By means of the process described in this patent, it is claimed that much of the chloride of calcium litherts wasted is collected and saved, and the stone is washed in as many minutes as formerly days. The invention consists in the rapid removal of the calcium chloride from the pores of the stone, by a strong blast of air, followed by a blast of air containing water in a state of fine division. The inventor states that the operation is completed in a few minutes, and that the cost of the apparatus required is but small.

Improved Grain Car Unloader.

Mason W. Bosworth, Binghamton, N. Y.—This invention relates to an apparatus for unloading grain in bulk from railroad cars; and it consists in the employment of a movable endless chain or apron, passing over guide drums, and carrying a projecting gudgeon or arm, which operates in connection with a slotted sliding plate connected indirectly with the scrapers or scoops, arranged within the car. The invention further consists in attaching to the slotted sliding plate a reciprocating rod, traveling between guide pulleys, and connected with the movable unloading scoops or scrapers so as to draw the same to the door of the car for discharging the grain. The invention also consists in connecting the unloading scrapers, by ropes, to the reciprocating rod, said ropes passing over guide rollers, and so arranged that when one of a pair of scrapers is drawn to the door of the car for discharging its load, the draw rope of the other will be slackened for permitting it to be retracted for the purpose of filling it.

Improved Locomotive Furnace.

Andrew J. Stevens, Sacramento, Cal.—This invention is a boiler door provided with a damper on the outside, and an air deflector on the inside. The lining of the fire box door is angular in form, and projects from the inside of the door, the lower portion of the lining being cut away so that an opening is formed. The upper portion of the lining acts as a reflector to throw the air downward to the surface of the fuel, so that it can readily mingle with the gases inclosed, and thereby produce a more perfect combustion of the fuel.

Improved Till Alarm.

Egbert O. Wood, Nashua, N. H.—By suitable construction, when a number of tumblers are all turned forward so that their short arms project upward, the drawer may be moved out and is freely. Should one or more of the tumblers be turned back so that their long arms project upward, the drawer cannot be drawn out without first forcing the said long arm of the tumbler or tumblers downward by operating the keys of the tumbler or tumblers that were turned back. When the key of a tumbler that has been turned forward is operated, the short arm of said tumbler is raised, so as to prevent a lock plate from dropping down and passing out beneath lugs. When an attempt is made to open the drawer with one or more of the tumblers raised, a lug of the lock plate will strike against the lug of a ratchet, and, releasing the lever, will sound the alarm. As the till or drawer is closed, the lugs of the lock plate slide up the inclined rear sides of other lugs, and drop down in front of said lugs, the rear part of the said plate resting upon the upwardly projecting arms of the tumblers. The alarm is set by turning one or more of the tumblers to the rearward; and the combination is changed by turning one or more of the tumblers forward or back, as may be desired.

Improved Weather Strip.

Oliver A. Vorce, Kentland, Ind.—This invention consists of a weather strip, which is raised or lowered in a groove at the bottom of the door, by being connected to the spindle of the lock by a suitable lever, so that on opening the door the strip is raised and retained in position by a band spring at the top part, which lowers the strip on the closing of the door by being depressed.

Improved Draft Equalizer.
Elias H. Blake, Coatsburg, Ill.—This invention is an improved equalizer which is readily attached to a tongue or plow beam, so adjusted as to allow the horse to walk upon either side of the tongue, and to give an advantage to the single horse or to the pair, as may be desired. The invention consists in a triangular equalizer provided with clamps for securing it to the tongue or beam, and having its forward arm slotted and provided with adjustable perforated plates to receive the hammer or pin by which the tripleteer is connected with it.

Improved Coffee Roaster.

William J. Lane, Millbrook, N. Y., assignor to himself and John G. Lane, of same place.—The drum is made of rectangular or other form, and one side is attached by hinges, so that it drops back, and is limited in its backward movement by the joint strap at each end. The roasting cylinder is revolved on central gudgeons supported by ears. One or both of these gudgeons may be hollow, through which the coffee in the cylinder may be inspected from time to time to determine its condition. The hollow gudgeons are closed by stoppers while the cylinder is revolving. While the cylinder is being revolved, and the roasting operation being performed, the hinged side is closed up to the drum, thus inclosing the roasting cylinder. When the coffee is sufficiently roasted, the side is drawn back and the cylinder is turned, so that by removing a slide the coffee will be discharged on an apron, and disposed of as may be desired. When not required for roasting coffee, the roasting cylinder may be removed and the drum closed up, which adapts the drum and stove for general heating purposes. Fuel is supplied by opening the drum, and may be introduced when the cylinder is in place, if desired. This roaster is more especially designed for dealers in coffee, where it is desired to roast it often, and have it fresh for customers at all times.

Improved Wash Boiler.

Oscar E. Culver and Leander E. Moseley, Eagle Bridge, N. Y.—The top is provided with a downwardly projecting flange, secured to said cover along its side edges, and at a little distance from its end edges. The top is made of such a size as to fit snugly into the boiler in which it is to be used, the lower edge of the flange resting upon the bottom of said boiler. The end parts projecting beyond the flange have a number of holes formed in them to allow the water to flow down freely into the spaces between the flange and the ends of the boiler. Partitions are placed a little distance from the end parts of the device, and with their upper parts inclined inward. The side edges of these partitions are attached to the flange, and their upper edges are attached to the top. In the upper part of the partitions are formed large slots or openings, to allow the water to pass through, which openings are covered upon the inner sides of the partitions with the valves, which are hinged at their edges to said partitions. By this construction the valves, when left free, will drop inward by their own weight. In the center of the top is formed a hole in which is secured the lower end of a tube, and to its upper end is attached a semicircular tube. By this construction, as the steam begins to form, the first effect is to close the valves and prevent the water and steam from passing toward the ends of the device. As the formation of steam continues, the steam and water pass up through the tube and are discharged upon the clothes. The water percolates through the clothes, flows down through the holes in the top, through the holes in the flange, presses open the valves and flows into the central space of the device, to be again heated and discharged through the tube, thus establishing a circulation. This arrangement of the valves prevents the back flow of the water, and at the same time allows the free inflow of the water.

Improved Churn Dasher.

Mrs. Herndon B. Robinson, Birmingham, Ala.—Four disks, made of tin or other sheet metal, are perforated with numerous small holes, and have a larger hole formed in their centers to receive a short tube in which the lower end of the dasher handle is secured. The disks are concave or made saucer-shaped. The two middle disks are placed upon the tube with their concave sides toward each other, and are soldered to said tube with their outer edges in contact with each other, which edges are soldered together. The two outer disks are placed upon and are soldered to the tube above and below the two middle disks, and with their convex sides toward the said middle disks. The disks are so arranged upon the tube that their perforations may not be directly opposite each other. A dasher thus constructed will throw the milk into violent agitation, it is claimed, and will also introduce into the milk large quantities of air, so as to bring the butter in a very short time.

Improved Printers' Furniture.

Henry A. Hempel, St. Joseph, Mo.—This invention is an improvement in the class of quoins consisting of wedge-shaped blocks combined with an incline bar or frame; and it consists in two quoins, straight on one side and inclined on the other, and provided with rack bars or toothed arms, with which a pinion or gear wheel engages in such a way as to move said quoins simultaneously toward or from each other. The arrangement is such that, when the pressure on one quoin is greater than on the other, the rapidity of movement of the one encountering less pressure will be accelerated until the pressure is equalized.

Improved Washing Machine.

John W. Tull and James W. Weston, Windsor, Ill.—This invention is an improvement in the class of washing machines formed of two or more rollers arranged to rotate in contact. The invention relates to an improved means of locking a sliding extension piece attached to the bottom or bed piece of the roller frame. The extension piece is made adjustable on the bed by means of slots and screws. Metallic pins in the ends of the bed and the extension piece enter holes in the sides of the tub when the bed is extended. The latter is held in position by means of a cam lever, which is pivoted to the bed, while the cam enters (when the lever is turned) a slot in the extension piece.

Improved Billiard Table Leveler.

David H. Hill, South Chester, Pa.—The object of this invention is to furnish, for the purpose of leveling billiard or baguette tables, pianos, clocks, parlor organs, and other objects, an improved evenner, which is applied to the feet or bases thereof, and allows the quick and easy adjustment of these pieces. The invention consists of a button or caster, with a bolt screw, which works into a socket of the billiard foot to be adjustable therein by means of a small hand wheel.

Improved Machine for Making Clothes Pins.

Benjamin B. O'Kington and Andrew J. O'Kington, Stratford Hollow, N. H.—The strips of wood are fed by pressure feed rollers into the machine to be turned into shape by the roughing cutters on the end of a hollow mandrel, and a finishing cutter in a slot in the side of the said mandrel. The roughing cutters act while the strips are being fed along, but the finishing cutter acts during periods of rest which the feed rollers are caused to have by the lack of teeth on a portion of a pinion which drives said feed rollers. The finishing cutter acts on the pin throughout its whole length, at the same time being revolved around it, and having its edge pressed against it by a spring as a wedge withdraws from behind it, and allows said spring to so press it and turn it on its pivots. The wedge is shifted forward to raise the finishing cutter from the finished pin to allow it to be fed along, a blank portion presented for another pin, and also shifted back to allow the cutter to act. A cam on the pinion shaft is so adjusted, relatively to the toothless part of said pinion, that at the moment the feed rollers stop it begins to act and move the wedge backward to allow the finishing cutter to act, and it completes the withdrawal of the wedge, and allows the finishing cutter to complete its work just before the pinion sets the feed rollers in motion again. It escapes just in time for a spring to throw the wedge forward and raise the finishing cutter before the pinion moves on again. The pins, still connected, pass in front of the cut-off saw, which is moved forward and cuts the pins apart. From the cut-off saw the pins are pulled along the way to carrier wheels, by which they are taken between stationary fingers and a movable finger, carried around, and presented to the slotting saw and finished.

Improved Animal Trap.

Hudson H. C. Arnold, Nicholasville, Ky.—The box of the trap is divided into two parts by a horizontal trip board pivoted to the sides. The outer or rear end of the lower part of the box is closed, and in its forward part is a hole of suitable size, leading into the chute or passage way. The rear end of the upper part of the box is left open, and its sides are partially cut away to form a large opening for the animal to enter upon the trip board or tilting platform. As the animal steps upon the rear end of a lever it disengages a catch, and the weight of the animal causes the forward end of the trip board to drop, when it is caught and held by the catch rod. As the animal drops into a chute he raises the pivoted wire gate, which hangs in an inclined position, and enters the middle part of said chute, the gate dropping behind him, and preventing his return. The animal now sees light be-

fore him, and, passing toward it he steps upon a lever, the rear end of which extends back to the catch rod, so that the weight of the animal stepping upon said lever may disengage the catch rod and allow the trip board to again take a horizontal position, where it is caught and held by the catch as hereinbefore described, and the trap is again set. A cage or some other convenient receptacle should be connected with the end of the chute to receive the animal.

Improved Direct Acting Steam and Water Propeller.

John S. Morton, Philadelphia, Pa.—This invention relates to improvements in propellers for navigable vessels in which paddlewheels or screws, also pistons, piston rods, cranks and walking beams are dispensed with, and steam and water are brought in direct contact in suitably arranged cylinders or chambers, having openings at their lower ends through which the water is alternately admitted and expelled by the corresponding alternate steam pressure and vacuum therein, the rapidity of propulsion being directly dependent, other things equal, on the rapidity of the in and out flow of water, or the force with which it is ejected through the orifice in the cylinder or chamber into the body of water in which the vessel floats. The invention consists in introducing hot air from the furnace into the vacuum cylinders simultaneously with the steam, to prevent condensation and produce expansion of the latter; also in arranging adjustable stops on the float rods to vary at pleasure the length of time of admission of steam to the cylinders and the height to which the water will rise in them at each pulsation; also in providing balance levers to relieve the floats of weight, and which serve to set the steam valves and put the apparatus in operation; also in various other mechanical arrangements for attaining the desired end.

Improved Concrete Pavement.

George Bassett, Syracuse, N. Y.—In making concrete pavements, side walks, etc., it has, up to this time, been considered necessary to use foreign Portland and other expensive manufactured cement, because it dries and hardens soon after being laid down, so that the public need not long be excluded from the places paved or covered. Our native Rosendale and other cements, are, as is well known, capable of making as hard and durable artificial stone by the mixture of sand, gravel, etc., as the aforesaid expensive cements; but owing to the long time (from three to six months) required for them to set and harden, it has been found impracticable to utilize them for pavements, roadways, etc., such as are made by laying cement while in a plastic state and allowing it time to set and harden before use. But owing to the great difference in the cost of the native and foreign cements, it is highly desirable to utilize the former in some way, inasmuch as they are equally as durable when sufficiently hardened.

The inventor proposes to get over the difficulty by using the native cements for about three fourths (more or less) of the pavement, placing the same at the bottom and about one fourth of foreign cement upon the top, which answers the purpose just as well for rendering the pavement capable of use as soon as the all Portland cement pavement is; for the upper crust of the latter cement dries as soon as when the pavement is wholly of such cement, and becomes sufficiently hard for surface wear; and the lower mass of native cement, being sustained by the surface of the roadbed, supports the crust so that it does not break while the slower drying process of the lower portion goes on.

Improved Reversible Stereotype Plate.

Marshall J. Hughes, New York City.—The plate is of about the usual thickness and weight, but has two letter faces or sides in place of one. Thus two kinds, and double the usual amount of reading matter, are furnished by means of a single plate. When one side or face has been printed from, the plate is reversed in the form and the other side or face is printed from in like manner. The invention also includes the use of a margin or edge lining of sheet metal, by which the plate is locked in the form. The margin is flexible, and is bent down and held by friction with the column rules. When the plate is to be reversed on the furniture, or block, the margin is bent in the direction opposite from what it was before. The marginal plate may be perforated or not, as preferred, to allow the melted metal to unite the two sides or faces of the plate more firmly together. The device is an important improvement in its class.

Improved Wash Board.

James A. Cole, Northville, N. Y.—This invention relates to providing a reversible wash board, with a pivoted head, so constructed and arranged as to adapt it to be folded between the projecting ends of the side bars, and thus occupy little space, or to be extended and set at an angle to the board proper for supporting it in the tub. The board is reversible in that it presents a coarse or fine rubbing surface, according as one end or the other is uppermost.

Improved Earth Auger.

Frederick A. Barlow, La Dora, Iowa.—This invention relates generally to the class of earth borers formed of a hollow flanged cylinder or case into which the loosened earth is received as the boring proceeds, and by which it is elevated and discharged. The specific improvement consists in constructing the cylinder with vertical grooves, exteriorly, to allow the downward passage of air during the boring operation, and in making the body of cylinder separate from the bottom and frame thereof, and connecting said parts by means of devices which are easily manipulated.

Improved Window Sash Lock and Holder.

Joseph T. Crow, Jersey City, N. J.—This invention consists in a combination with sashes of a double cam sash fastener, pivoted to the inside of the window frame, and having arms of different length with cam faces, so that either sash of a window may be held securely at any point of the same fastening.

Improved Breech Loading Fire Arm.

Francis J. Fuss, Wiesbaden, Germany, and John Week, Baltimore, Md.—This invention consists in the combination of the firing pin, made in two parts, and hinged together with a swinging breech block, having arms pivoted thereto near its front end, the loose ends of said bars working against the collar on the firing pin during the depression of the breech block, and thereby cocking the piece in the act of operating the breech.

Improved Wind Wheel.

Philipp Brand, Josiah Barrows and Alexander Armstrong, Jacksonville, Ill.—This is an improvement in the class of wind wheels mounted a little out of line with the regulating vane and adapted to be self regulating. The wheel is arranged on a tubular support, which is fixed above the vane support so as to turn on a hollow shaft, and has a horizontal arm with a friction roller on it, working in an ascending spiral slot formed in an arm of the vane support. By this arrangement the wheel may swing around parallel with the vane out of the wind when the latter is too strong, at the same time forcing the aforesaid arm up the inclined slot, so that the gravity of the wheel and its support will cause it to move back into the wind when the force of the wind decreases enough.

Improved Carpet.

Gregory Isktyan, New York City.—This improvement in carpets and blankets consists of a long thick nap raised up from a weft of felt and woolen yarn, or strips of felt alone, in any desired way, and then pressed and matted down smooth and compact upon the surface to hide the warp threads of cotton, linen, and the like, such as are used in the manufacture of carpets of list. It is also proposed to make fabrics for carpets and blankets of which the weft is wholly of felt with warp, as in the other case, and either press the nap down or not. The object is to cover and conceal the warp of coarse and cheap materials, and impart a finer finish to the surface than can be had without such surface dressing.

Improved Railway Crossing.

James Brahn, Jersey City, N. J.—This invention is an improved railroad crossing, so constructed as to guard and strengthen the parts of the rails where the notches are formed for the passage of the wheel flanges, and to prevent the notched rails from being battered by the wheels. The invention consists in slotted or hollow metallic blocks filled with wood, provided with wooden facing blocks, and with a metallic guard bar which projects above the top of the blocks to serve as a flange or guard to guide the flange of the wheel into the notch in the intersecting rail, and prevent it from hitting and injuring the head of the rail at the side of said notch. The bar is bolted to said rail in the manner of a fish plate, being bent to fit the angle. The rails are further strengthened and kept in line by braces, which cross said angles.

Improved Pie Marker.

Thomas S. Macomber, Hamilton, N. Y.—This invention consists of a rotary trimmer of concave shape placed with a serrated marker on the end of a handle, said marker being provided on its face with a stamping design and air hole cutters. The dough used for the pie is rapidly trimmed by the sharp edge of the trimmer, while the serrated wheel crimps it at the same time. The impress of the stamping device and cutters finishes the dressing of the pie before baking.

Machine for Removing Snow and Ice from Roadways.

Charles G. Waterbury, New York City.—An iron box of any suitable form is mounted on four wheels for drawing it along the street. A furnace is at the front end inclosed on the sides and top, but open at the bottom. The sides extend rearward the whole length of the apparatus, to confine the heat and form a long channel for the escape of the same. In such manner as to confine it to the work. A hood may be attached to the rear to prolong the channel, and arranged to raise and lower as required. The furnace is surrounded by an inner wall. Between these two walls is a water space which extends to the bottom of the sides, and is prolonged to the rear end of the box, under a floor in the rear part of the box, over which there is another floor to protect the operators and the contrivance above from the heat. The cover of the channel has several depressions to prevent the escape of the heat too rapidly, and throw it down on the snow and ice. The grate bars consist of tubes when the heat is blown down from the fire between them, and have connection with the water space, so that the water will circulate in them and protect them from the heat. The charger, consisting of a large vertical tube rising up from the top of the furnace, is provided with two slide doors so that, by having the lower one closed and the upper one opened, it can be filled without allowing the blast to escape, and, by closing the upper one and opening the lower one, the charge can be delivered into the furnace also without allowing the blast to escape. A coil of pipe, having small perforations, is arranged around the interior walls for injecting hydrocarbon fuel from a tank, with which it is connected outside of the furnace, said tank being arranged so that the oil will flow in the pipe having a cock to regulate the flow. A rotary fan is arranged in the rear part of the box to blow the heat down to the surface of the ground. This fan is driven by belts and pulleys connected with the hind axle of the machine, or by a special steam engine. A pipe conducts the steam from the water space down to the fire below the grate, for adding its heat to that of the fire for melting the snow, etc.

Improved Locomotive Window.

John H. Dinsmore, Boston, Mass.—The object of this invention is to construct the doors and windows of the engineer's room of locomotives in such a manner that the glass is kept free from moisture, frost, or other obstructions to the sight, allowing the engineer a more perfect outlook on the track. The invention consists of a window or door with an outer and inner sash, between which one or more steam pipes extend along its circumference, so as to produce such a temperature in the space between the glass panes that no vapor or frost can settle thereon. Both sashes are hinged, the inner one to the outer, and the outer, by hinged joints, to the steam pipes, so that the windows may be thrown open, if desired.

Improved Bracelet Fastening.

Shubael Cottle, New York City.—The bracelet is made in two parts, hinged to each other at one end, and secured by an ordinary spring. A small cap, of such a size as to shut down over the knob of the catch, is hinged to the end of the part of the bracelet that contains the socket. To the inner surface of the free end of the cap is attached a small pin, which, when the cap is shut down, springs into a small hole in the knob of the catch and covers the knob, thus preventing it from becoming accidentally unfastened.

Improved Rubber Mat for Pitchers, etc.

Cornelius A. Price, Jersey City, N. J.—The part of the mat upon which the pitcher is to stand is circular in form. The portion for the tumblers is of such a width that the tumblers may stand upon it, and it extends partially or wholly around the pitcher. The upper surface of the two parts is ribbed with cross ribs, which are made of such a height as to form deep square or diamond-shaped depressions over the entire surface of said parts, to receive the drip. An elevated hub is arranged so as to prevent the pitcher from being pushed against the tumblers.

Improved Churn Dasher.

David Boyd, Vevay, Ind.—This invention consists in a dasher composed of two cross bars and band. The two arms of each cross bar are beveled in opposite directions, and the side cross bars are so arranged that each two adjacent faces of the blades may both incline upward and from each other or both incline downward and from each other. To the outer ends of the blades is attached the band, which is so formed that the part which is opposite the faces of the blades that incline upward may incline inward and upward, and the part that is opposite the faces of said blades that incline downward may incline downward and inward. By this construction, as the dasher moves either upward or downward, four strong currents of milk will be formed, two flowing outward toward the wall of the churn, and two flowing inward toward its center.

Improved Wheel for Vehicles.

David Brown, Clinton, Texas.—Upon the end of the axle is formed an axle arm, made octagonal or of other polygonal form. A short cylinder has a hole formed through it of the same shape as the axle arm, and its outer surface forms the journal of the hub. The cylinder is placed upon the middle part of the arm, and upon said arm, upon each side of the cylinder, is placed a flange, made somewhat conical in form, which are secured in place upon said axle arm by a pinch pin. A ring, which forms the hub proper, is made with a ring groove to receive the tenons of the spokes, which tenons are separated from each other by thin partitions, which may be made V-shaped. The outer edges of the ring have flanges formed upon them, which overlap the edges of the flanges first mentioned. The spokes may be further secured in place by bolts passed through the flanged outer edges of the ring.

Improved Fly Trap.

George W. Elchholtz, New Berlin, Ill.—The base plate is made of tin or other sheet metal, to which is attached the cylindrical body of like material. Within the latter a wire gauze cone is arranged, and hooks applied by staples to the body lock into short radial slots of the base plate, allowing the easy cleaning of the plate and cone, and the ready insertion of the bait. At the lower edge of the body, below the main cone, are arranged small wire gauze cones, through which the flies enter in search of the bait. The main cone is truncated, and provided with a small inverted cone, forming circular slots with it, through which the flies pass up into the upper part of the trap. This upper chamber consists merely of a common wire cloth dish cover, which fits tightly on the upper edge of the body, but is removable therefrom.

Improved Combined Stubble Shaver and Scraper.

Henry Von Phul, Jr., and James Mallon, Holly Wood, La.—The forward parts of the vertical side frames of the machine are rounded up to adapt them to serve as runners, and have shoes attached to them, which are extended upward, and are attached to the top bars of said frames. Knives are bolted to the horizontal arms of the 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. A triangular or V shaped block, the sides of which are made slightly inclined and are faced with metal, is constructed so as to push or scrape from the ridge the stubble and soil cut by the knives. By proper arrangement, the knives and 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 Spring for the Seats of Vehicles.

Conrad Ducker, Lively Grove, Ill.—The object of this invention is to provide simple, durable springs for wagon seats, and it consists of a circular hook spring, which is attached to each corner of the seat, the springs resting on the edges of the wagon box.