come dyspeptic before they are out of their teens, in consequence of being about the house and nibbling at everything they lay their eyes on that is good to eat.

In the *Chronique de la Société d' Acclimatation*, M. Ruimet states that, by feeding silkworms on vine leaves, he has obtained silk of a fine red color; and that by giving the worms lettuce leaves, they have produced cocoons of an emerald green color. M. Delidon de St. Gilles, of Vendée, has also, by feeding silkworms—during the last twenty days of the larva period—on vine, lettuce, and nettle leaves, obtained green, yellow, and violet cocoons.

THE AYRSHIRE COW.—The Ayrshire is bred, and has been bred, for milk; her inheritance is all in the line of milk producing. Her form indicates it; her records prove it. When aged and dry, the same functions which ordinarily fill the udder fill her muscles with fat; but while milking, inheritance, intensified yearly by selection, turns the energies of her system towards extracting materials from her food, and secreting the larger and richer part in the udder. As the shorthorn stands with the grazier, who has tried their quality, so does the Ayrshire stand with the dairyman. By seeking improved breeds, the farmer is adding materially to the profits of his farm, for he is utilizing the great power and unerring certainty of inheritance.—*Dr. Sturtevant.*

Recent American and Foreign Patents.

Improved Apparatus for Extracting Cane Juice.

Duncan Moffat, New Orleans, La.—This invention consists in the arrangement of a holding device with the delivery rolls of the mill and the rotary cutting apparatus; also of a vat containing a secondary steaming compartment under the one into which the crushed and chopped cane is first received, containing revolving chopping and beating blades; also, stationary ones to continue the disintegrating process until the cane is reduced to pulp. The bottom of said compartment is perforated to filter the juice from the pulp as much as possible; and has a spout leading from it to conduct the pulp to an endless carrier, by which it is delivered to pressing rollers to expel the remaining juice. The two compartments of the steaming vat are separated by a valve, which is turned from time to time to deliver the cane to the lower compartment in batches, which have been subjected to the steam in the upper compartment a sufficient length of time. Below the filtering bottom of the lower compartment there is a trough, which receives the juice falling down from said compartment, and conducts it to the evaporator.

Improved Needle Threader for Sewing Machines.

Thomas Schofield, Grass Valley, Cal.—The body or handle part of the needle threader is of thin sheet metal, and the instrument may be placed in an upright position. At one end of the handle is a forward projecting guide piece which passes up and down along the side of the needle, until a hook strikes the eye of the needle and enters through it. The hook has a curved end of very small size, which takes up the thread and draws the same back through the eye of the needle. The rear part of the hook is bent in U shape, and held in a groove in handle by means of a plate and screw. A small set screw regulates the distance of the hook from guide piece, to be adjusted to needles of different thicknesses. At the other end of handle a hook and needle guide are placed in similar manner, but under a right angle to the body of the handle, so that needles may be threaded from the sides, back, or front.

Improved Propelling Mechanism for Vessels.

Lindsay Murdoch, Marble Hill, Mo.—This invention consists in a horizontally sliding frame and a bar carrying at its lower end paddle floats sliding vertically therein and horizontally therewith. By this arrangement the paddles have parallel vertical and horizontal motions, so that they are presented to and leave the water edgewise and move against it directly in the line of the motion of the boat.

Improved Saw Sharpening Device.

John B. Drake, Goshen, Ind.—The file guide has, at one end, jaws to hold the file, and is rounded at the other to slide in a hole through an adjustable guide, by means of which it may be placed at any desired hight. This apparatus is applicable to vertical saws as well as to circular saws. By means of it the file is carried in a straight line across the saw.

Improved Automatic Fire Escape for Safes.

Ira Parke, Mineral Point, Mo.—It is proposed to have a safe resting on a platform having wheels, and pivoted at one end, while the end next to the wall of the building is suspended by an easily combustible rope or other contrivance, to be destroyed by a fuse or a gun discharged against it, or burned off to let the platform fall. The platform, which is arranged in front of a trap door in the wall opening into the street, is to unfasten the door in its fall and force it open, and the door is to form a continuation of a descending track, of which the platform is the other part, on which the safe will roll into the street, and thus be saved from the fire. Fuse may be connected with the suspending rope, and arranged throughout all parts of the building, to ignite the rope or discharge the gun against it when the fire breaks out in any part of the building; and the fuse will also be arranged to communicate the alarm to the office or other apartment.

Improved Tap Holder Attachment for Beer Coolers.

Joseph Hyde Fisher, Chicago, Ill.—This invention consists of an attachment to beer coolers for packing the hole through which the faucet projects to prevent the escape of the cold air, which is composed of metal clamping rings, and a rubber packing ring, arranged in two parts, of which one is fastened to the box, and the other to the door, in connection with the tap hole.

Improved Boy's Sled.

Samuel D. Mott, Milford, Pa.—The rear ends of two springs are secured to the framework of the sled, to the forward ends of which is attached a cross bar, in such a position that the rider, when sitting upon the sled, may rest his feet upon the said cross bar, either upon the outer or inner sides of the side frames of the sled, as may be desired. To the center of the cross bar is pivoted a small runner, which is made of a much less hight than the sled, and the springs are made of such a strength as to hold the said runner away from the ground, except when pressed down by the rider's feet, resting upon the cross bar. To the runner is attached a cross bar, to which are attached the ends of cords. By pressing the runner down to the ground with his feet, and pulling upon one of the cords, the rider can incline the runner to one or the other side, and thus guide the sled as desired.

Improved Fountain Hand Stamp.

Francis J. Coutant, New York city.—This invention relates to the construction of stamps for certifying checks and for similar purposes, having special reference to what is known as the "ribbon stamp;" and consists in a fountain for the ink and in a movable pad. The shafts being immersed in ink, the ribbon is of course saturated with it. As the ribbon is drawn from the fountain it passes between two packing pieces, the object of which is to strip off the surplus ink from the ribbon and to keep the fountain closed. These packing pieces are made of elastic material, compressed by means of the metallic plates and screws. After leaving the packing pieces, the ribbon is drawn over the rollers and beneath the type plate, and then upward and into the fountain. By this invention the trouble and expense of frequently renewing or saturating the ribbons are avoided. The pad, by means of a lever, is thrown upward against the ribbon and type, instead of operating the stamp, in the usual manner, by a blow on the stem. With a pad constructed in this manner the stamping may be done with the same hand that holds the paper, or with one hand.

Improved Metal Planing Machine.

John T. Kichner and William H. Odenatt, Philadelphia, Pa.—This machine is specially designed for planing the valve seats of locomotive and other engines, it being secured to the engine by screwing its stand bolts into the holes of the steam chest bolts when the steam chest is removed, and to adapt it for attaching it to different engines, in which the holes vary in the distance apart. The top frame or disk on which a revolving disk is arranged is provided with short radial arms for attaching the stand bolts to, which are adjustable radially and circumferentially. The feed screw is turned by a star wheel, which is brought in contact with one or more stationary pins each time it makes a circuit.

Improved Car Coupling.

August Schorg and Benjamin Van Valkenburgh, Cobleskill, N. Y.—A band which slides on closes the drawhead, and is operated by a forked lever. The drawhead is made in two parts, one of which is attached rigidly to the truck by means of clips. The other part is hinged, and drops down by its own gravity when unsupported. The parts are each recessed out to form the mouth and opening of the drawhead, and are held firmly together by the band when the latter is slipped forward. At the top and bottom of the flange is a loop, which the forks of the lever enter. The lever is held in position by means of a forked iron attached to the timber of the truck. The handle end of the lever is bent upward to make it convenient to handle as well as to fasten. When the handle end of the lever is thrown up to the truck, the band is thrown outward, so as to keep the drawhead closed and the coupling link confined. In this position the lever is confined by a pin in the forked iron. When the lever is thrown outward, the band is thrown back, which allows the part of the drawhead to drop down ready to receive the link of the opposite coupling.

Improved Apparatus for Graining Wood, etc.

Charles Falke, New York city.—In using the extension roller, the requisite width of the article to be grained is first taken, and the apparatus is then adjusted by loosening the handle frame, setting the female screws and shells to the desired width, fastening the handle frame again, inserting the band rollers and flexible band fitting that width. The roller is pressed over the color board, which leaves the imprint of its grain on the periphery of the cylinder. The grain marks are thence transferred to the surfaces to be grained.

Improved Nut Lock.

Daniel Sawyer, Washington, Ind.—A washer plate is placed upon the bolts before the nuts are screwed on, to which is secured one or more pieces of steel, which are made thin and fastened edgewise, and upon the upper part of each is formed a spring, standing out a little upon one side, preferably upon the side next the nut to be locked. A plate is pivoted to the pieces near one end, and is slotted so that it may be turned down upon the washer or turned back. The inner edge of the slotted plate is turned up at right angles, and the steel piece is placed at such a distance from the nut to be locked that the turned up part of the plate may rest against the side of the nut, and thus prevent the said nut from turning. By this construction, when the plate is turned down, the steel piece passes through the slot in the plate and the spring springs out over the said plate, preventing it from rising.

Improved Snow Plow.

William J. Roberts, Cold Spring, N. Y.—A revolving bucket wheel is arranged in front of the locomotive on a vertical shaft, and is revolved by means of a belt, or gearing may be substituted, from a pulley on the axle of the locomotive to the pulley on the vertical wheel shaft. The wheel is the frustum of a solid cone. The outer edges of the buckets are parallel with the side of the cone, the ends being cut on the plane of the base and upper surface of the cone. A loose upper clutch revolves with the shaft, and is dropped down by means of a screw or otherwise, and engages with the pulley clutch when it is desired to run the snow plow. As the locomotive moves forward, the wheel clears away the snow from the track and throws it to one side.

Improved Faucet Attachment.

James Church, St. Louis, Mo.—This invention consists of a cup of india-rubber or other elastic material, or partly of elastic material and partly of metal, combined with the faucet in such a manner that, when the barrel is tapped, by driving the cork into the barrel with the end of the faucet, the cup will prevent the escape of the liquid while the faucet is being adjusted and before it is made sufficiently tight to stop the leak.

Improved Refrigerator.

Charles Camp, Mott Haven, N.Y.—This invention consists in a removable ice box, fitted into the upper part of the smaller of two compartments of the main box, so that it may be conveniently taken out and put in when desired. The cold air from the ice chamber passes through a pipe and into a horizontal hollow shaft, and escapes through the holes in the sides of said shaft. To the end parts of the hollow perforated shaft are attached two four-armed plates, to the ends of the arms of which are pivoted the turned up ends of shelves, so that the said shelves will always hang downward and be right side up, however the shaft may be turned. This construction enables any desired shelf to be turned toward the door, so that anything can be readily put upon and taken from it. The shelves are secured in any desirable position by a long screw which passes in from the front of the box through the end wall of the said box, so that its forward end may bear against the side of the end of the shaft, and thus prevent it from turning.

Improved Washing Machine.

Arthur M. Campbell, Kline's Grove, Pa.—This invention consists in the combination of the binding frame with the suds box of a washing machine to strengthen said box against the pressure of the operating mechanism, in the U spring, in combination with the lever and the rigid arm attached to the presser board, which allows the end of the lever to be readily adjusted upon the arm to adjust the presser board to the amount of clothes to be operated upon. By suitable construction, as the presser board moves forward, the clothes are pressed between said presser board and a stationary presser board, pressing out the water, which carries the dirt with it. As the presser board moves back, the back rush of the water sweeps the clothes back from the stationary board, and turns them over so that they are operated upon by the presser each time in a different place, and are thus cleaned thoroughly in all their parts.

Improved Printing Press.

Jacob G. Peterson, Morgantown, N. C.—The rollers are arranged in a reciprocating carriage, which is suspended on the type bed by the upper roller. The bearings of the lower roller are immovable in the carriage. The bearings of the upper roller are capable of moving up or down in the carriage, and have an adjusting screw by which the pressure of the rollers in the bed is regulated. The carriage has two toothed bars, extending from one side, between two wheels on the crank shaft and the presser rollers, which are mounted in stationary housings. The crank shaft being turned forward and backward by a half revolution each way will cause the presser rollers to move forward beyond the type and back again, which makes the impression on the paper. After each operation the tympan is raised, the printed sheet is removed, and an unprinted sheet is applied, and the tympan is lowered for the next operation.

Improved Quilting Attachment for Sewing Machines.

William H. Null, Blandinsville, Ill.—This invention relates to an improvement in the class of machines for supporting, stretching, and moving quilts or other fabrics across the feed plate of a sewing machine; and consists in a peculiarly constructed carriage and a tilting roller frame, on which it is supported, and in devices for holding and adjusting the fabric.

Improved Plow Carriage.

Henry M. Bullitt, Louisville, Ky.—This invention consists of independent axles for the truck wheels, having a long upright arm at right angles to them inside of the wheels, said arm having a series of holes at short distances apart, and connected by a short axle, which can be shifted higher or lower by changing it in the holes. From the center of this arm the beam is hung by a crotchet hanger, and is connected by adjustable braces with the lower ends of the arms to maintain them in the upright position. The depth of the furrow is governed by the position of the suspending axle in the arms, and the plow is supported entirely above the ground, for transporting it from place to place, by adjusting the suspending axle in the top holes.

Improved Pruning Instrument.

William H. Collings, Raytown, Mo.—A pole of any desired length is made hollow to receive a wire, which passes through it longitudinally. Upon the upper end of the wire is cut a thread to screw into the shank of the saw which projects above the end of the pole, and fits into a dovetailed groove or socket in the side of a ferrule attached to the upper part of the pole, where it is secured by a set screw. By this construction, in using the instrument, the hook is passed over the twig to be cut, and the wire pulled down through the pole. The saw is operated by the reciprocating movement of the wire and pole upon each other.

Improved Self-Closing Faucet Attachment.

Robert McConnell, William Truesdell, and Fredrick Mertsheimer, Omaha, Nebraska.—An inside collar, at the end of the faucet tube, serves as shoulder rest for a spiral spring, which coils around a tubular valve, resting with its other end against a shoulder of the same. Apertures at the end of the valve allow the liquid to pass out through the tube when that end projects outside. A solid extension of valve, of smaller diameter than the same, is threaded, and holds, by nut, a soft rubber disk and a strainer on the end of the tube. The rubber disk is of the same diameter as the tube end, the strainer fitting closely over the same. By the joint action of the spiral spring and nut, the disk is pressed firmly against the end of the tube, closing the same effectively, so that no liquid can escape. The faucet, when it is desired to draw off the fluid, is turned in far enough to strike the valve, forcing the same back, so that the disk is carried toward the inside of the vessel, and the apertures of the valve pass to the outside of the tube. The liquid enters, therefore, through the strainer and apertures into the valve and the faucet, and is easily allowed to escape.

Improved Boring and Drilling Machine.

John J. Sheridan, New York city.—This invention has for its object to furnish an improved device for drilling, boring, cutting screw threads, etc. The machine may be adjusted by means of set screws, and its base is secured to the table by bolts, so that it may be further altered in position by simply loosing the nuts of said bolts. Screws, which pass down through the base and rest against the table, enable the machine to be conveniently adjusted horizontally or plumbed, and the bolts secure it firmly in place when adjusted. The upright frame of the machine is made in the form of a segment of a hollow cone, in two parts, flanged and bolted together so that the upper and lower parts may be adjusted upon each other. The tool holding shaft passes up through the hub of a bevel gear wheel, so that the said wheel may carry the said tool holder with it in its revolution while the said tool holder may be free to move longitudinally in said wheel. The latter revolves in bearings in the frame, and engages, by a gear wheel and also by pulleys and band, with the driving shaft. The shaft is provided with two sliding clutches, and is made to carry the band pulley or gear wheel with it in its revolution, according as one or the other of the clutches is thrown into gear. A three armed lever has forks upon two of its arms, which enter grooves in the clutches, so that one of them may be thrown into and the other out of gear by a single movement of the lever. The third arm of the lever serves as a handle. Power is applied directly to the shaft by means of another shaft meeting it at an angle and connected with it by bevel gear wheels. To the upper side of the gear wheel, through which the tool holder passes, and upon the opposite sides of the center, are attached studs, the upper ends of which are connected by a bar. To the middle part of the bar is swiveled a screw, which screws into the upper end of the tool holder, so that the tool can be fed down to its work or raised from its work by turning the said screw in one or the other direction. By suitable mechanism, each revolution of the gear wheel feeds the tool shaft down the distance of one thread of the swiveled screw. By a suitable device, when a female screw thread has been cut, the cutter may be withdrawn from said thread, allowing the holder to be run out quickly, and without danger of injuring said screw thread.

Improved Bee Hive.

George Miller, Battle Ground, Wash. Ter.—This invention consists in an improved bee hive formed of a number of cells, provided with a roof, and supported by a single shaft or post from a base. Around the foot of the post is placed a vessel to receive water to prevent ants and other insects from crawling up. The main frames are formed of an upper and a lower plate within the cells, connected at their side edges by two or more bars. In the top and bottom plates of the main frames, and midway between the side bars of said main frames, are formed grooves to receive the top and bottom bars of the single frames, so that the said frames attached to them may be drawn out conveniently and without breaking or otherwise injuring the comb, or the comb in the main frames. The bottom plates of the main frames are slotted, to give free passage ways to the bees. The lower or open ends of the cells are closed with plates, which are secured in place by buttons pivoted to the partition walls. The buttons are semicircular in form, which enables them to be turned to release one plate without releasing the other.

Improved Propulsion of Vessels.

George Boucher de Boucherville, Quebec, Canada.—This invention consists in an improved wave motor for turning the propeller screw of a ship, vessel, or boat. A heavy platform is suspended by pivoted rods so as to vibrate freely with the pitching of the ship. The after rods are extended each some distance upward; and to their upward ends are pivoted bars which are also pivoted to vibratory rods which carry reversed spring pawls. These pawls move alternately ratchet wheels which are rigidly attached to independent sleeves that are loose on a shaft, and have each a large bevel spur wheel. Between these wheels and engaging with both is a small bevel pinion on the propeller shaft, which, by the motion of the two large wheels, is turned by either alternately in the same direction. The vibrations of the platform are thus utilized and transferred to the propeller. Patents on this invention have also been obtained in England and various countries on the continent.

Improved Inclinometer or Grading Level.

Dr. John Thomley, Charlottesville, Va.—This invention has for its object to furnish a simple and inexpensive but efficient instrument for readily determining grades, inclinations or angles of various surfaces; and it consists in applying a graduated extensible bar to the ordinary carpenter's or mason's level, and providing such means for adjustment and clamping the same as will enable it to support the level at various inclinations and indicate the grade.

Improved Bee Hive.

John H. Stockwell, Bronson, Mich.—This invention consists in making the honey frame of a bee hive in separate sections, so as to turn like the leaves of a book, thus facilitating inspection, and in making the case in sections, locked detachably by suitable projections and recesses, to enable too large a swarm of bees to be easily divided.

Improved Gage Cock.

Albert A. Murray, Baltimore, Md.—This invention consists in a cock valve and seat, the former arranged to rotate about the stem in combination with a spiral spring that yields sufficiently to allow readily the rotation of the valve and yet to hold it in any position desired.

Improved Car Coupling.

William W. Haver, Schuyler, assignor to himself, James Atwell, of same place, and William Gates, Frankfort, New York.—The coupling pins are passed through the bumper head, and are made with shoulders upon their upper ends, which rest upon the upper sides of the bumper heads and are secured in place by pins passed through them at the lower side of the said bumper head. Upon the upper ends of the pins are formed hooks, which point toward the car bodies. The coupling link couples the cars by being dropped over the hooks of the pins. A short standard is connected with the middle part of the coupling link and receives an arm which is pivoted to said standard by a pin passing through a longitudinal slot in the said arm, to give the link the necessary play to accommodate itself to the various movements of the bumpers. The other or inner end of the arm is attached to a short shaft, which is pivoted and to which is attached a short arm, to the outer end of which is pivoted the lower end of the rod which passes up through a keeper attached to the car body. To the rod is attached a double stop to hold it in place. By this construction, by raising the rod the link will be raised from the hook pins, uncoupling the cars; and when the rod is lowered, the link will be lowered upon the hook pins, coupling the cars.

Improved Feather Renovator.

Elason B. Cooper, Monticello, N. Y.—The outer casing forms, together with the semicircular bottom of sheet metal or other suitable material, a steaming chamber, the upper part of which is of hexagonal shape and arranged with hinged lids, and perforated screens below them. A hollow shaft passes centrally in longitudinal direction through the chamber, and carries, near the side walls of the same, drums, with perforations of the sides facing toward the interior. Longitudinal strips connect the drums, and act as stirrers on their rotation. The steam is admitted to the hollow shaft from its opposite end, and passes through the perforated drums to the interior of the chamber, being led out again by means of tubes at the top of the casing. The doors are tightly closed during the steaming process, to produce a thorough cleansing of the feathers. The condensed water, together with the dirt, collects at the bottom of the chamber, and is drawn off through a dumping box. The drying chamber extends from the lowest point of the steam chamber along its full length on the side opposite the dumping box. It is provided with the entrance and exit pipes through which the steam is admitted and let out for drying the feathers after the steaming process is completed. The outer doors or lids are opened during the drying and cooling process to allow the free passage of a current of cold air through the feathers.

Improved Manufacture of Steel.

Hilaire Andre Levallois, Paris, France.—This invention relates to a compound prepared from soft iron, tungsten, and nickel, which forms a cast steel of superior quality. The proportions used are: for the first quality, soft iron, ninety-three parts; tungsten, six and one half parts; nickel, one half part. For the second quality, soft iron, ninety-five parts; tungsten, four and one half parts; nickel, one half part. For the third quality, soft iron, ninety-seven parts; tungsten, two and one half parts; nickel, one half part. The furnaces and crucibles employed are the same as those ordinarily used in the manufacture of cast steel. The tungsten and nickel are mixed together and inclosed with a suitable flux in a soft sheet iron tube, which is placed in the center of the charge, said charge being sprinkled over with a quantity of the flux, varying (in proportion to the quantity of the metal treated) between one half part and two parts of flux to one hundred parts of metal. As soon as the mass has become liquid it is run off in the usual way into a sand or metal mold, the latter being lined with a mixture of clay and percarburet of iron. Before and during the process of running off the fused metal, a vacuum is produced in the meld by covering the bottom of the funnel with a diaphragm of parchment, which is destroyed by the contact of the fused metal. When the alloy is run into a metal mold, the ingot is removed as soon as it becomes solidified. It is then annealed in a closed vessel, and allowed to cool gradually. The steel produced as above described may be hammered in the same way as ordinary steel. The flux is composed of biborate of soda, calcined silex and carbonate of lime, pulverized in a mortar, mixed together, placed in small quantities in a crucible heated to a white heat, and, when liquefied, run off on a fluted cast iron plate. Finally, the flux thus obtained is crushed into small particles before it is used.

Improved Vessel for Transporting Grain in Bulk.

Francesco Demartini and John Chertizza, New York city.—Cross stays are placed about half way between the deck and the bottom of the vessel, and are connected for the support of the sides. Stanchions are placed on each of the cross stays, supported at right angles with the deck, and have partition boards upon each side, which divide the portion of the hold above the cross stays into three compartments. The partition boards on the insides of the stanchions extend from the deck about one third the distance to the stays. Those attached to the outer sides of the stanchions extend from the cross stays upward a short distance above the lower edges of the inner partition boards, so that the two boards of each set of stanchions lap past each other. The compartments are connected by the spaces between the stanchions, so that the grain may pass over the outside partitions from the outside compartments, and under the inside partitions into the central compartment. This is done as the vessel rolls and is careened. The result is, the central compartment is soon filled after the vessel commences to roll, and the grain in that compartment is retained. By this improvement, shifting of cargo, it is claimed, is so prevented that no damage can occur, and the vessel is navigated as easily as it is when laden with immovable cargo.

Improved Folding Camp Baker.

Frederick Lehnen, Marquette, Mich.—The object of this invention is to provide (for the use of surveying parties, expeditions, and others, who are obliged to encamp in the field at some distance from human habitations,) an improved baker, which can be readily folded up after use. The invention consists of a main part with two side wings and a top hinged to it, which are arranged and connected by suitable rods for carrying the baking pan. The latter is placed in a horizontal position by elevating the main part by means of hinged supports. The main and hinged parts may be folded up so as to incase the pan and lock all the parts safely together.

Improved Combined Padlock.

Wm. C. Langenau, Cleveland, Ohio.—This invention relates to permutation lock and consists in novel means by which the combination of numbers may be conveniently changed. The peculiarity of this permutation locks consists in pivoting a plate on a stud that has projections which act in conjunction with notches on a subjacent plate and thus allow the changes of combination to be easily effected.

Improved Broom Hanger.

Mary A. Clifford, Boston, Mass.—There is a metallic spring loop and an open spring band, the two being connected by eyes. This band is made large enough to receive the small end of a handle, so as to hold it by friction. The loop is hung upon a nail, and thus suspends the broom.

Improved Windmill.

George Stearns, Eldorado Mills, Wis.—This invention consists of novel contrivances for causing a pumping windmill to start and stop self-actingly by the influence of the water raised up into the tanks and by weights it also consists of an ingenious contrivance for adjusting the vanes to take the wind more or less, by the influence of the wind; and it also consists of an extension of the frame to the front side of the wheel, to furnish a bearing for the front end of the shaft.

Improved Wheel for Vehicles and Mode of Detaching Horses.

Rolla R. Jones, Pillar Point, N. Y.—The tire is semicircular in form, or has its edges bent inward, so as to enter grooves in the felly. A nut is inserted in an open cavity in the felly, and a sheet metal cap is then applied over the felly at that point, and its flange covers the lateral opening of said cavity. A screw having a head passes through nut and cap. The end of the spoke tenon rests or abuts on the screw head. The sheet metal socket is divided longitudinally to adapt it to be fitted over the screw head, and is tightly clamped around the nut and around the spoke tenon by rings. When it is desired to disconnect the felly and spokes, the bands are slid off the socket, and the latter may then be sprung off the head of the screw. Another improvement in wheels by the same inventor consists in a metal plate, let into the felly in the axis of the spoke, and secured by a pin. The bearing piece for the end of the spoke is clamped on the felly by a key. The cap has flanges overlapping the sides of the felly to secure it against splitting. The bearing piece may be cast together with the cap. The spoke is slotted at the end suitably to be fitted on the plate and key, and it is firmly secured thereon by a plate bent around the spoke and secured by bands, which are driven on tight and secured by solder. An elastic washer is placed between the band and cap to lessen the shocks. The same inventor has also patented an improved device for detaching horses from shafts. Near each end of the whiffletree is attached a short arm, in the outer side of which is formed a recess to receive a projection formed upon the inner side of a similar arm, which is pivoted to the end of the whiffletree. With the pivoted arm is connected a spring so as to draw back the arm whenever it may be released. To the outer side of the short arm is attached a loop to receive the tug and prevent it from sticking upon the projection of the other arm and being carried with said arm when it is drawn back. To two levers is connected an eye by means of which the levers are operated to withdraw catches and allow the pivoted arms to spring back, releasing the tug. The eye may be operated by hand, or by a wire extending to the carriage and secured in such a position that it may be readily reached by a person in said carriage to detach the horse when desired.

Improved Mode of Operating Bellows of Furnaces.

Hugh Crumlish, Buffalo, N. Y.—This invention consists in the means for causing the bottom of the bellows to remain always parallel with the top while being moved up and down.

Improved Machine for Shaving Shingles.

Thomas H. Carter, Bremen, Ky.—This invention consists in combining with rotary radial drivers, cutting blades set in the direction of chords less than the diameter of the circle within which the driver rotates; also in the relative arrangement of regularly intervaled drivers and blades, the sets of each differing in number; also in combining rotary drivers and stationary knives with guides and springs to hold the shingle blank in operation. This machine is entirely without cog wheels, or any other mechanism so liable to get out of order, require frequent repair, and create delay as well as expense. The power required is very small indeed in proportion to the amount of work that may be accomplished. Of course, on the same principle, a large or small machine may be constructed, the number of knives and drivers, as well as other parts, being variable; but, with one horse, seventy-two thousand shingles may be shaved in a satisfactory manner, in a working day of ten hours, by careful and practised workmen.

Improved Horse Hay Rake.

Burton J. Downing, Mitchell, Iowa.—This invention has for its object to furnish an improved horse hay rake so constructed that the teeth can be conveniently raised to dump the hay when desired by the advance of the machine. By suitable construction, when a sufficient amount of hay has been collected by the teeth, the driver with his foot pushes forward the end of a lever which throws the parts of a clutch into gear, and the movable part of said clutch is carried around with the axle. This draws a chain forward, the first effect being to raise a pawl from a rack. The second effect is to draw the upper arm of a lever forward, which raises the rake teeth and discharges the collected hay.

Improved Coal Scuttle.

Amasa S. Thompson, Little Falls, Minn., assignor to himself and Louis Vasaly, of same place. This invention relates to coal hods or scuttles; and it consists in the cover, made in two parts, which are hinged at opposite sides so as to be opened and closed by the bail.

Improved Machine for Manufacturing Carpet Lining.

Edward H. Bailey, Brooklyn, N. Y.—This invention consists of apparatus combined with the machinery used for arranging the bat and the paper sheets together, by which odoriferous substances are sprinkled upon and mixed with the bat in regular and uniform quantity while the lining is being made and before the bat is inclosed between the papers. The invention also consists of apparatus for pasting the paper to cause it to unite with the bat, gaged to the paper rolls by rollers, and caused to rise up to the paper rolls as they decrease in size by cords and weights.

Improved Wagon Seat.

Michael Likes, Mansfield, Ohio, assignor to himself and J. H. Barr, of same place.—This invention consists in providing the wagon seat with risers or supports, which are of angular form in one direction, and pivoted to the sides of the wagon box, and produced under a certain angle, so that the seat is not only thrown forward, but inclines at the same time beyond the foot board.

Improved Children's Building Blocks.

Abraham Oberndorf, Jr., Baltimore, Md.—This invention relates to blocks wherewith children may be amused and their minds instructed by the combination of said blocks so as to present the semblance of well known objects. The invention consists in making these blocks of such relative shape that, although comparatively few in number, houses, bridges, arches, chairs, rockers, cupolas, tables, fences, windmills, the letters of the alphabet, chandeliers and other articles of furniture and of an architectural character, may all be produced by their different combinations.

Improved Hay Elevator and Carrier.

Cyrus H. Kirkpatrick, Lafayette, Ind.—This invention furnishes a device for raising hay from the load, in a perpendicular line, to any required hight, and then carrying it in a horizontal line to any part of the barn, after which the car is returned by a weighted cord and the empty fork lowered to the pitcher without any exertion on his part. It consists of an iron bumper and latch pivoted together and held in a car which hangs on a track suspended by hooks from the rafters of the barn. The latch has an elbow, extending downward, which is forked and forms a rest for a trip block placed on the rope; so that, when the trip block strikes the bumper and unlatches the car, the forked rest is thrown under and supports the load while traveling back into the barn. When the car returns over the load or floor, it is latched fast, the forked rest flies from under the trip block, and the fork is lowered for another load. The car slides on hard wood slides, and the track is spliceable and supportable at any point.