solutions, and spirituous or fermented liquors therefrom, either by the acid or diastase process. 8th. The process of manufacturing dextrine, glucose, etc., which consists in subjecting the maize (whole or comminuted, and bolted or unbolted with or without the oil being extracted), with water to the action of steam under pressure (with or without allowing a portion of the steam to escape), until it is thoroughly disintegrated, then separating the impurities and unconvertible matter, by passing it through suitable strainers, bag or suction filters, filter presses, centrifugal machines, or other suitable device, and then converting it into dextrine, glucose, sugar, and sacharine solutions, and spirituous or fermented liquors therefrom, either by the acid or diastase process. 9th. As a new article of manufacture, the described depurated glucose. 10th. The process of straining or filtering the gummy mass, by passing it through suitable strainers, bag or suction filters, filter presses, centrifugal machines, or other similar devices, for the purpose of separating and removing the impurities and unconvertible matter, after it has been wholly or partially converted into dextrine (with or without the aid of acid or diastase), but prior to its conversion into glucose, sugar, or sacharine solutions. 11th. The use, in the manufacture of glucose, sugar or sacharine solutions, and spirituous or fermented liquors therefrom, of a gummy mass made from maize or other amylaceous substances, by the aid of water and heat, that has been purified, strained, filtered, or had its impurities and unconvertible matter separated or removed, by means of a centrifugal machine or other suitable apparatus, after it was wholly or partially converted into dextrine (either with or without the aid of acid or diastase), but previous to its conversion into glucose, sugar or sacharine solutions. 12th. The combination of the dry reduction or comminution of the corn or other grain, the separation, by means of sifting, winnowing, bolting, or other similar device, of the bulk of the fibre, gluten, albuminous and oily matters, the disintegration of the starchy matters with water and heat, either in a closed tank, by steam or pressure, (with or without the escape of a portion of the steam, or the aid of stirrers) or in an ordinary mash tub, the separation of the removal of the remainder of the impurities and unconvertible matters from the gummy mass, by passing it through suitable strainers, bag or suction filters, filter presses, centrifugal machines, or other similar apparatus, either before or after it has been partially or wholly converted into dextrine, with or without the aid of acid or diastase, and its subsequent conversion into glucose, sugar or sacharine solutions. 13th. Subjecting the maize, etc., (whole or comminuted, and bolted or unbolted, with or without the oil being extracted) with water to the action of the steam under pressure (with or without allowing a portion of it to escape, or the aid of stirrers) until it is thoroughly disintegrated, and is partially or wholly converted into dextrine, with or without the aid of acid or diastase, then separating or removing the remainder of the impurities and unconvertible matters from the gummy mass, by passing it through suitable strainers, bag or suction filters, filter presses, centrifugal machines, or other similar apparatus, and converting it into glucose, sugar or sacharine solutions, either by the acid or diastase process.

No. 12,952. Improvements on Mowing Machines. (*Perfectionnements aux faucheuses.*)

John Watson, Ayr, Ont., 11th June, 1881; for 5 years.

Claim.—1st. The combination, with a shoe B secured to the finger bar and pivoted to the outer end of the coupling bar, of locking lever E pivoted to the coupling bar, toothed locking mechanism, lever H and chain G, whereby the finger bar can be locked vertically, or at any desired angle, and lifted by the locking lever. 2nd. The shoe B pivoted on the pin D to the coupling bar A and provided with a toothed sector C, in combination with the pawl F pivoted to the coupling bar A and operated by the lever E. 3rd. The toothed sector C on the shoe B, pawl F and lever E on the coupling bar A, in combination with the chain G, hand lever H and notched sector I.

No. 12,953. Improvements on Method and Means for Clasping Belts. (*Perfectionnements dans la méthode et les moyens d'agrafer les courroies.*)

William M. Whiting, Elizabeth, N. J., U. S., 11th June, 1881; for 5 years.

Claim.—1st. The method of uniting the ends of round belts by inserting the ends of the belt within a tubular clasp, and compressing peripheral grooves into the tube near the ends, to clamp and hold the belt. 2nd. Compressing the belt near each end, and forming peripheral recesses and then inserting or enclosing the ends of the belt in a clasp and compressing the tube into the recesses. 3rd. A clasp for connecting the ends of round belts, formed of a tube with flaring or bell mouthed ends. 4th. The belt clasp having bell-mouthed ends and inwardly projecting ribs that grasp the material of the belt near the ends. 5th. The pincers for applying the clasp, formed with recesses and inwardly projecting ribs near the ends of the recesses. 6th. The pincers for applying the clasp, formed with the short semi-elliptical recesses *b b* and semi-elliptical recesses *d d*, the said recesses being formed with inwardly projecting ribs.

No. 12,954. Improvements in Side Bars for Locomotives. (*Perfectionnements aux barres d'excentrique des locomotives.*)

John R. Fish, Grand Rapids, Mich., U.S., 11th June, 1881; for 5 years.

Claim.—1st. A side bar for connecting the driving wheels of a locomotive, with a strip of wood attached longitudinally to the top and bottom edges of the side bar. 2nd. The combination, with the locomotive side bar B, of the wooden strips A A attached longitudinally to the bar B, and of the clevices C, transverse plate D and nuts E. 3rd. The side bar proper, longitudinal wooden strips and devices for holding the strips to the side bar.

No. 12,955. Improvements on Mill Feed. (*Perfectionnements dans l'alimentation des moulins.*)

Frank W. Kepner and Ebenezer C. Blake, Houlton, Me., U. S., 11th June, 1881; for 5 years.

Claim.—1st. The combination, with the spindle B, of an elongated or elliptical collar A mounted thereon, and of a cup C, with an elliptical recess on the underside. 2nd. The combination, with the tube D and funnel E, of the adjustable bridge F supporting the tube and funnel of the recessed cup C loosely mounted on the spindle B. 3rd. The cup C constructed with a concave upper surface, and an elliptical or like recess in the under side.

No. 12,956. Improvements on Velocipedes. (*Perfectionnements aux velocipèdes.*)

John Hopwood, Heaton Norris, Eng., 11th June, 1881; for 5 years.

Claim.—1st. The general construction and arrangement of the velocipede or pedomotive machine to carry three persons, also the peculiar construction and arrangement of the curved perch or back bone, whereby a bearing is obtained both at the top and bottom of the front fork, and thus great stability is insured, and a good lock of the front wheel for steering obtained. 2nd. The application of the connecting rods and slides to such a machine. 3rd. The arrangement whereby one or both passengers are enabled to assist the driver in propelling the machine, when required.

No. 12,957. Improvements on Explosives. (*Perfectiounements aux composés explosibles.*)

William R. Quinan, San Francisco, Cal., U. S., 11th June, 1881; for 15 years.

Claim.—A high explosive composed of nitro-glycerine, nitro-cellulose, chlorate or nitrate of potash, or their equivalent oxydizing agent.

No. 12,958. Improvements on Fabric Hose. (*Perfectionnements aux boyaux en tissus.*)

Seth W. Baker, Providence, R.I., U.S., 11th June 1881; for 15 years.

Claim.—1st. A rubber lined tubular woven fabric consisting of three or more plies having a portion of the warps of the inner and of the outer plies interwoven with the adjacent or intermediate ply or plies, the remaining portions of the warp of the outer and of the inner plies passing nearly straight over and under the weft or filling of said plies, whereby the outer and inner surfaces are closely woven, and a tubular fabric formed without seam or joint. 2nd. A rubber lined tubular woven fabric composed of three or more plies, wherein the warp of the outer ply is of strong thick thread, and the warp of the inner ply of fine thread, one half of the warp of the outer ply and one half of the warp of the inner ply together with a continuous weft, constituting the main portion of the outer and inner surface of the fabric, while the remaining portion of the warp of the outer and inner plies is laid diagonally and interwoven with the intermediate ply or plies by the continuous weft, which latter is laid helically and extends through all the plies. 3rd. A rubber lined tubular woven fabric composed of three or more plies, wherein a continuous weft or filling is laid successively through the several plies of the fabric, said weft passing from the outer to the inner ply, in helical form, and then outwardly to the outer ply, thereby forming a continuous helical filling which extends the entire length of the fabric. 4th. A rubber lined tubular woven fabric made up of three or more plies, wherein one half of the warp of the outer ply and one half of the warp of the inner ply are laid alternately over and under the continuous weft, while the remaining portions of the warp of said plies are interwoven with the intermediate ply or plies by said weft, which latter is laid helically between the successive plies of the fabric, the entire warp and weft of said fabric being woven together, whereby the fabric, in its normal condition, is of oval or flattened form in cross section.

No. 12,959. Improvements in Rotary Engines. (*Perfectionnements aux machines rotatoires.*)

Henry Thibalt and Thomas Hawkins, San Francisco, Cal., U. S., 11th June, 1881; for 5 years.

Claim.—A rotary engine having the drum B with its radial sliding pistons moving within the case A, the steam channels within the case, having the independent ports F Q, whereby steam is admitted to both sides of the pistons to balance them, when they are moving out and in. 2nd. The broad elastic plate D with its projecting rib or abutment E, said plate D exerting a constant pressure to form a tight joint between the case and the drum, and preventing noise and wear as the pistons pass. 3rd. The double coil spring or cushion J beneath the pistons having the crossed arms extending to the pistons to press them outward. 4th. The pistons consisting of the frames or ribs G forming a close fit within their channels in the drum, and the panels or body H. 5th. The pistons formed of the panels H and the ribs or frame G, said ribs having the transverse slots I to admit steam to balance the pistons, and conteract atmospheric pressure. 6th. In combination with the pistons G H, the spring packing edge plates L. 7th. The packing, for the joint between the drum and the case, consisting of the hemp or other soft packing N fitting the angular or V-shaped channel, and the ring M to hold it in place, in combination with the set or adjusting screws at P. 8th. The hemp or other soft packing N with its compression ring M and set screw, in combination with the flat faced ring O and its adjusting screw. 9th. The case A having the drum with its sliding pistons rotating within it, in combination with the rotary cut off valve perforated or slotted, and moving upon a seat having a slot or opening through which steam may pass, as each opening in the valve passes it. 10th. The rotary cut-off valve slotted and moving upon a seat having a corresponding opening, in combination with the shafts and bevel gears, by which the movements of the valve are controlled. 11th. The pin *h* upon the main shaft adapted to enter a segmental slot in the gear wheel *g*, which is loosely fitted upon the shaft, said pin driving it from either end, and thus adjusting the cut off to operate when the engine is running in either direction. 12th. The engine A having the cut off valve T, in combination with the supplemental steam pipe *i* with its valve, said pipe leading directly to the engine, independent of the cut off.

No. 12,960. Improvements on Shoes. (*Perfectionnements aux souliers.*)

Timothy A. Collins, Watertown, N.Y., U.S., 11th June, 1881; for 5 years.

Claim.—The combination, with the quarters of a shoe-upper A, of the elastic packing B inserted upon the seam, and adapted to completely pack the space between the upper and the back of the ankle, and fastened to the thinly skived piece of leather or other suitable material C fastened to the quarters, upon each side of the seam.