row-opening disks attached thereto, the drag-bar provided with the top flange *k* containing recesses *l*, substantially as and for the purposes described. 11th. In combination with the drag-bar having the slots *e*, and the teeth *f* on both faces, the two disk-supporting plates provided with teeth and applied to opposite sides of the bar, and bolts extending transversely through the bar and both plates, substantially as described. 12th. A furrow-opening disk having a central portion abruptly depressed below the plane of the periphery, as described and shown, to form an abrupt shoulder on the working-face thereof. 13th. A furrow opening disk having an annular face c_2 of a true flat form, a central depressed portion, and an abrupt shoulder between the flat face and the central depressed portion, substantially as described. 14th. A furrow-opening disk having its outer face provided with an abrupt annular shoulder b_2. 15th. In combination with a drag-bar, a furrow-opening disk carried thereby in a position oblique to the line of travel, said disk having its working face formed with a central depression and an abrupt annular shoulder, as distinguished from a disk having a smooth concave surface. 16th. A spout or conductor for a seeding machine, having its lower end flattened laterally, and formed with a delivery orifice elongated in the direction of the line of travel, whereby the spout is enabled to deliver the seed centrally in a narrow furrow. 17th. A conductor-tube for seeding machines, having at its lower end a constantly open delivery orifice elongated in the direction of the line of travel, and the laterally-yielding plate forming one side wall of said orifice, as and for the purpose described. 18th. In combination with a furrow-opening disk B, a conductor-tube lying adjacent to the inner rear face of said disk, its lower end flattened and curved towards the disk and provided with a yielding side plate, as described.

No. 27,555. Seeding Machine. (*Semoir.*)

William D. Arnett, Denver, Col., U. S., 2nd September, 1887; 5 years.

Claim.—1st. In a seeding machine, the combination, substantially as described, of the wheeled frame, the vertically swinging drag-bar attached adjustably to the frame, so that its angle to the line of travel may be changed and the furrow-opening disk attached to said drag-bar. 2nd. In a seeding machine, the combination of a wheeled frame, a series of drag-bars, each provided with a furrow-opening disk, and a transverse shaft or rod to which the drag-bars are jointed to swing vertically and independently, said shaft connected adjustably to the frame, substantially as described, so that its angle to the line of travel may be changed, whereby the obliquity of the disks to the line of progression may be varied to produce wide or narrow furrows, as demanded. 3rd. In a seeding machine, the combination of a wheeled frame, a series of drag-bars, each provided with a furrow opening device, a swivelling support connecting the shaft at one end to the frame, and a longitudinally movable support connecting the shaft at the opposite end to the frame, whereby the angle of the drag-bars to the line of travel may be changed at will. 4th. The wheeled main frame, in combination with the two series of drag-bars, the two shafts sustaining the drag-bars of the respective series, the swivelling bearings at the outer ends of the shafts, the sliding bearing at their inner ends, and the operating lever connected with the last-named bearing, whereby the two series of bars may be adjusted in opposite directions as regards their horizontal obliquity to the line of travel. 5th. In combination with the wheeled frame, a transverse shaft secured thereto, a drag-bar journalled on said shaft to swing vertically, a furrow-opening disk attached to the drug-bar, and a shoe or runner jointed at its forward end on said shaft, and adjustably attached at its rear end to the drag-bar. 6th. In a seeding machine, a wheeled frame, in combination with a series of vertically and laterally swinging drag-bars, attached thereto and provided with furrow-opening disks, a hand lever and intermediate connections, substantially as described, whereby the lever is enabled to effect the lateral swinging movement of the beam. 7th. The combination of the main frame, its wheels, the arms attached to the frame, the two shafts, the drag-bars mounted thereon, the bearings at their outer ends, and the sliding bearings at their inner ends. 8th. A drag-bar, consisting of two connected bars having their forward ends separated horizontally for attachment to the frame, and their rear ends arranged one directly over the other, substantially as described. 9th. The drag-bar consisting of two flat metal bars, each having a quarter-twist midway of its length, their forward ends separated horizontally, and their rear ends arranged one directly over the other with their flat faces in a horizontal position, substantially as described. 10th. In combination with a drag-bar, and a furrow-opening disk oblique to the line of travel, a disk supporting plate, a vertical pivot connecting said plate to the drag bar, and means, substantially as described, for fastening the plate in position. 11th. The drag-bar having the upper and lower members, in combination with the disk-supporting plates inserted between said members, the vertical pivot and the adjustable wedges between the plates. 12th. The drag-bar having the upper and lower members, the intermediate disk-supporting plates, and the adjusting wedges, in combination with the bolt f_1 acting to compress the bar upon the wedges and hold them in the required position. 13th. In a seeding machine, the combination of a wheeled frame, a vertically-swinging drag-bar jointed thereto, a furrow opening disk journalled to said drag-bar, its axis standing in a plane oblique to the line of travel of the machine, and also at an inclination from the horizontal, and the seed-spout or conductor also carried by said drag-bar, immediately behind the disk. 14th. In combination with the drag-bar, having the upper and lower members, the block *d* secured between their rear ends, substantially as and for the purposes described. 15th. In combination with a drag-bar, and an oblique furrow-opening disk carried thereby, a shoe or runner attached to the beam and bearing on the ground opposite the disk, whereby the disk is caused to act at a uniform depth in travelling over uneven ground. 16th. In combination with a drag-bar, and two furrow-opening disks on opposite sides, a runner attached to the drag-bar and acting on the ground between the disks. 17th. In combination with a drag-bar, and a furrow-opening disk applied obliquely to its side, a runner applied to the bar adjacent to the side of the disk, and devices, substantially as shown, for adjusting the runner vertically in reference to the bar and disk. 18th. In combination with a drag-bar and an oblique furrow-opening disk carried thereby, a furrow-closing arm extending from the bar past the outer side of the disk, and curving inward in rear of the same. 19th. In combination with the disk, and the disk-supporting plate having an upright arm e_6, the seed-conductor h_1 pivoted to said arm and adapted to interlock therewith, substantially as described, whereby the tube is sustained in a proper position for action and permitted to swing freely upward. 20th. In combination with the two-part drag-bar and its intermediate block *d*, the runner, the coverer-sustaining plate *l* and the single bolt k_1, applied, as described, to connect said parts. 21st. The combination, substantially as described, of a drag-bar, two disk-supporting plates pivoted to said bar to swing horizontally, and an adjustable wedge attached to the drag-bar and formed at its edges to engage and hold the swinging plates, substantially as set forth. 22nd. The combination of the drag-bar, the adjustable wedge grooved or flanged to embrace said bar, and the horizontally-movable disk-supporting plates B_1, B_2, having their rear edges notched to engage the edges of the wedge, whereby the plates may be adjusted both inward and outward by the movement of the wedge, and secured in position. 23rd. In combination with the drag-bar, having the upper and lower members *a*, *a*, the intermediate pivoted plates B_1, B_2, notched at their ends, the wedge D_3 provided at its edges with flanges engaging the plates and the fastening-bolt E_2, substantially as described. 24th. In a seeding machine, the combination of a drag-bar and two furrow-opening disks attached to opposite sides of said bar, one in advance of the other, and inclined in opposite directions from the line of draft, substantially as and for the purpose described. 25th. In a seeding machine, a drag-bar and two furrow-opening disks arranged on opposite sides of the same, and inclined horizontally in opposite directions with reference to the line of draft, one located in advance of the other, in combination with two independent plates supporting the respective disks, and connected to the drag-bar by independent vertical pivots, located one in advance of the other. 26th. In a seeding machine, the combination of a drag-bar, two plates B_1, B2 pivoted to said drag-bar at different points in its length, and two furrow-opening disks C_3, C_3, mounted on the respective plates, one in advance of the other. 27th. In combination with the drag-bar, having the upper and lower members *a*, *a*, the spacing plate F_2 inserted between and bolted to said members and extended laterally beyond the same, in the form and manner substantially as described. 28th. In a seeding machine, the combination of the wheeled main frame, the drag-bars having the forked draw-heads, the transverse shaft on which said heads are mounted, the depending arms to sustain said shaft, the draft-bars or arms extending forward from said shaft, the bar to which the draft arms are connected for supporting said shaft from the main frame. 29th. In a seeding machine, the combination of the wheeled main frame, the drag-bars having the forked or widened drawheads, the horizontal shaft on which said heads are mounted, and rigid depending supports, substantially as described, sustaining said shaft below the main frame. 30th. In a grain drill, the combination of the main frame, the depending arms at its front, the cross-bar sustained by said arms, the draft-bars or arms extending from the front bar rearward, the shaft extending from said draft bars, the depending arms to sustain said shaft, and the drag-bars mounted at their forward ends on the shaft, substantially as described. 31st. In combination with the wheeled frame, and the transverse shaft on which the drag bars are journalled, the depending arms c_5, and the laterally inclined arms d_5 connecting the shaft with the main frame. 32nd. In a seeding machine, a wheeled frame and a series of drag bars jointed at their forward ends, in combination with a series of upright rods connected at their lower ends to the respective drag-bars, and arranged to slide at their upper ends through guides on the frame, a weight and an equalizing lever or levers connecting said weight with two or more of the rods, as described. 33rd. In a seeding machine, the combination, with the main frame and a series of drag-bars jointed thereto, the series of equalizing levers connected with the respective drag-bars, and a box-like receptacle suspended from said evers and adapted to receive weights, as described.

No. 27,556. Mowing Machine. (*Faucheuse.*)

Thomas E. Curry, Windsor, N.S., 2nd September, 1887; 5 years

Claim.—The combination of the shaft A, carrying peripherally grooved eccentric disks C, D, each having divided rings F, F_1, connected by bolts and nuts K, and applied peripherally to the eccentrics, and pitmans H, H^1 screwing into a collar G on the rings F, F_1, and hinged to the cutter bars J, J_1, as set forth.

No. 27,557. Heel Plate. (*Plaque de talon.*)

Francis H. Richards, Springfield, Mass,, U.S., 2nd September, 1887; 5 years.

Claim.—The improved heel-plate, herein described, consisting of a plate provided with puncturing prongs for the attachment thereof to the heel, and having dams or cut-offs, substantially as described, for preventing the free access of water to the base of said prongs, substantially as set forth.

No. 27,558. Nut Lock. (*Arrête-ecrou.*)

John L. Pope, Cleveland, Ohio, U.S., 2nd September, 1887; 5 years.

Claim.—A cylindrical screw bolt, having a bent and flattened spring head portion, substantially as hereinbefore set forth.

No. 27,559. Machine for Driving Nails.

(*Machine à chasser les clous.*)

Henry S. DeForest, Birmingham, (Administrator of the Estate of Thaddeus Fowler, Shelton) Conn., U.S. 2nd September, 1887; 5 years.

Claim.—1st. The combination, in a device of the character described, with the case arranged to hold a coil of nails, of the stationary driver secured upon the nose of the case, the spring-actuated cut-off bar adapted to slide in and out of said case, and the feed-