combination with the collar G and the housing B 9th The cap E, provided with recess and channels in its top, to receive the oil from the pump and carry it to the back or inner end of the bearing, and grooves *l* in its under face connecting with the former, 10th The stopping post C provided with an angular upper corner and a lug or brace on the back, to bear against the housing, in combination with the housing and the door D provided with a notch or recess *c*, 11th The cap E provided with an overflow channel N, 12th The saddle A provided with recesses in its lower edges, to receive lugs on the housing · 13th The chambered post C arranged to extend to the op of the vibrating pump and to house its top on three sides, 14th. The removably attached hardened spherical segment *b* mounted upon the roof of the housing; 15th The bearing cap E arranged to extend over the flange of the button, on the end of the axle journal, 16th The bearing cap arranged to extend over the flange of the axle button, and recessed to form a hood for the same.

No. 9174. Improvements on Harvesters.

(Perfectionnements aux moissonneuses.)

John S Royce, Cuylerville N Y, U S, 10th September, 1878, for 5 years.

Claim.—1st. The combination of the wide tongue extension, the sleeve-bearing secured thereto, the driving and supporting wheel, its projecting hub mounted in said bearing, and the stud axle, 2nd. The combination of the loose driving wheel, the projecting tubular hub, the flanged sleeve bearing, the tongue extension, to which said bearing is bolted, the stud axle and the disc or flange upon its inner end against which said bearing and hub abut, 3rd The combination of the single driving or supporting wheel, the tongue or draft frame inside thereof and the fender encircling the gearing and its supporting frame and hinged at each end to the tongue, 4th The combination of the single driving wheel, the tongue extension, the rear cross piece secured upon the tongue and connected with the platform at its inner end, the seat and the seat supporting standard mounted upon and rocking on the outer end of said cross-bar outside the driving wheel: 5th. The combination of the tongue, the driving wheel supported thereby, the front and rear cross-bar secured to the tongue, the platform supported at the inner ends of said cross-bars, and the drivers' seat supported upon the outer ends of said cross-bars outside the driving wheel, 6th The combination of the tongue, the rear cross bar, the front cross-bar, the drivers' seat supporting plate-spring connected at one end to said front cross-bar, and the standard and spring connecting said supporting spring with the rear cross-bar, 7th. The combination, in a harvester having no main frame proper, of a main driving and supporting wheel, a tongue extending back of said wheel, a rear rigid cross-bar secured to the tongue at its heel, and the platform connected by a hinge to said cross-bar and capable of rocking thereon transversely thereto, 8th. The combination of the supporting wheel, the tongue, cross bars rigidly secured thereto in front and rear of the supporting wheel, the cutting apparatus, the platform hinged to said rear cross bar, the coupling arm hinged to the shoe, and the lever for rocking the guards mounted upon the front cross-bar, 9th. The combination of the supporting wheel, the tongue, the rear cross-bar rigidly secured upon the top of the tongue at its heel the brace-bar rigidly secured to the underside of the heel of the tongue, and the platform and fender jointed to said cross bar and brace and rocking thereon parallel with the tongue; 10th. The combination of the platform, the fender, the vertical bracket at its rear end, the bracket bearings, the coupling pin, the rear cross bar slotted at its end, the perforated brace-bar, and the tongue, 11th. The combination, in a harvester having no main frame proper, of a hinged platform, cutting apparatus, a main gear wheel, its supporting frame or bracket mounted on the platform or finger beam and shoe, and having a boss upon which said gear wheel is mounted, the supporting wheel, its axle, and the universal shaft connecting the axle and gear wheel 12th The combination of the single driving or supporting wheel, the universal shaft, the main gear wheel, its supporting frame over the heel of the floating finger beam, the vertical crank shaft, and the pinion on its lower end meshing with the teeth of said main gear, 13th. The combination of the gearing supporting frame over the heel of the finger beam, the main gear wheel driven by its universal shaft connection with the supporting-wheel axle, the boss on the gear supporting frame about which said gear wheel revolves, the vertical crank shaft turning at its upper end in a collar supported in said boss, the crank wheel and pinion at the lower end of the crank shaft, and the pitman for driving the cutters, 14th. The combination of the frame supporting the gearing over the heel of the finger-beam, the main gear wheel revolving about a boss on said frame, the upright crank shaft, the collar in which said shaft is supported at its upper end, the collar shaft mounted in and projecting through said boss, and the disc or washer on said shaft to keep the main gear wheel in place, 15th. The combination of the main gear wheel having an inner and an outer circle of teeth thereon, the crank shaft directly driven by the outer set of teeth, and the crown wheel for driving the rakes by the inner set of teeth, 16th. The combination of the rocking platform, the shoe, the gearing supporting frame secured at its base upon the platform and shoe, the fender, the plate or top support of the gearing frame secured thereto, the rake driving crown wheel mounted on said plate, and the doubly toothed main gear directly driving both the rake and cutters, 17th. The combination of the main gear wheel, its peripheral flange, the crank shaft pinion, its flange, crank wheel, and the adjustable roller, whereby the two gears are kept securely interlocked, 18th. The combination of the gearing supporting frame, the crank-shaft, the crank wheel and pinion provided with a collar, the gearing supporting frame or bracket, the rollers carried thereby, the adjustable roller, and the main gear wheel between said roller and the crank shaft, whereby the crank shaft is sustained and wabbling of the main gear prevented, 19th. The skeleton gear supporting frame or bracket, constructed with the posts flanged at their lower ends, the brace connecting the posts and carrying rollers, and the swinging arm carrying the adjustable roller, in combination with the gearing, 20th. The combination of a yoke on the rake arm, and a rake head bracket sliding and turning between the yoke arms, whereby the rake head may be oscillated in the yoke by first moving the bracket endwise, 21st. The combination of the short rake arm, its yoke, the rake head, its bracket movable endwise along and oscillating in the yoke, the rake arm extension upon which said bracket is mounted, and the spring acting upon the bracket with a tendency to prevent endwise movement thereof, 22nd The combination of the short rake-arm, the oscillating rake-head, the bracket at the inner end of the rake-head turning and sliding upon an extension or rod of the rake arm, the rake arm yoke in which the bracket is secured, a locking arm on the yoke base, an engaging shoulder on the bracket base, and a spring acting upon the bracket with a tendency to keep the bracket and yoke locked together to prevent oscillation of the rake head, 23rd. The combination of the series of continuously revolving rising and falling short rake arms, the oscillating rake head, yokes on the rake arms, brackets secured to the rake heads turning in said yokes and interlocking therewith, springs acting upon the brackets with a tendency to keep them locked with the rake arm yokes, the curved spring rake guides traversed by the rake head brackets, and the tripping arm to oscillate the rake heads, 24th. The combination of the yoke on the rake arm the bracket turning and moving endwise therein, the oscillating rake head the curved spring rake guide supported at one end on the fender and provided with a shoulder or abrupt incline, and the vertically operating tripping-arm acting upon the rake head bracket to unlock it from the rake arm, and cause the rake head to be quickly oscillated by the contact of its bracket with said shoulder. 25th The combination of the fender the vertically reciprocating tripper arm outside thereof, the spring inside the fender and acting on the tripper with a tendency to keep it elevated, the bell crank lever, and its cord or wire; 26th. The rake head bracket constructed with cross-arms perforated at their middles to turn upon the rake arm rod *o*, the lugs *p* to abut against the yoke arm, and the offset or shoulder *q* to engage with the locking arm on the yoke, 27th. The rake-head bracket provided with the edge rib *q*, 28th. The combination of the rake arm, the yoke having the arm *q* and perforated outer end, and the removable rake arm rod *o*; 29th. The combination of the large forked guard fingers, the small guard fingers arranged between them, and the cutter bar provided with teeth arranged at intervals with spaces between them, and each playing through one of the small guard fingers and in one of the forks of each of the large fingers adjacent thereto, whereby the tooth cuts at three points at each reciprocation. 30th. The series of large and small guard fingers cast in sections each forming in small guard, and the adjacent parts of the large guards at each side thereof with a single shank, 31st. The series of large and small guards connected together by means of the mortise and tenon connections between the large guards only 32nd. The combination of the main gear wheel, the crank shaft pinion, and the crown-wheel carrying the rakes, whereby both rake and cutter are driven directly from the interposed main gear.

No. 9175. Improvements in Piston Packing.

(Perfectionnements dans les garnitures des pistons)

Samuel L Carter, (Assignee of Joseph Varon,) Union, Ind., U.S., 11th September, 1878, for 5 years.

Claim—1st A cylinder head provided with a wrench passing through it, 2nd The combination with a perforated cylinder head provided with a conical valve seat, of a wrench head, a portion of which is tapering or conical in form, and arranged to seat within the conical recess in the cylinder head, 3rd The combination with a piston the packing of which is adapted to be expanded by means of an angular ended bolt passing through the follower, of a wrench, the shank of which extends through the cylinder head, 4th. The combination of the follower *h*, rod *i*, cone *g*, ratchet *a*, pawls *b*, bars *f*, springs *d* and packing rings *e e*.

No. 9176. Improvements on Carburetters.

(Perfectionnements aux carburateurs.)

Edward A C. Pew, Welland, Heber V Noel, Ottawa, Jay W. Schooley Welland, and Arthur Lloyd, St Catherines, Ont., 19th September, 1878, for 5 years.

Claim.—A gas carburetting apparatus formed by outer and inner shells A C and partitions E E¹ E², provided with gas tight ends B and D, the spaces between the outer and inner shells A C and covers B D being filled with non-combustible and non-conducting material, and the spaces between the perforated partitions E E¹ E² packed with cotton, wool or its equivalent, and partially filled with a carbon oil of suitable specific gravity, the said apparatus being arranged so that the gas will enter at the pipe F and after passing through in the manner described, finally escape into the distributing pipe G.

No. 9177. Improvements in Gas Carburetters.

(Perfectionnement dans les carburateurs à gaz.)

Madison Buell, Buffalo, N.Y., and Walter B. Moore, New York, U.S., 23rd September, 1878, for 5 years.

Claim—1st. The combination of perforated cylinders C and D, with the headings E having annular flanges *e e* and with rod F and nuts *f f*¹, 2nd. The combination of perforated cylinders C and D having absorbent packing between them, with the imperforated plate K, 3rd. The imperforated cylinder A having inlet pipe G and outlet pipe H, heads B, rod F and nuts *f f*¹ *f*², combined with the perforated cylinders C and D having an absorbent between, and fitted with headings E, having flanges *e e*, 4th. The air or gas inlet pipe G, in combination with perforated cylinders C and D, and plate K, 5th Placing the cylinders A C and D in a longitudinal form.

No. 9178. Improvements on Mowing Machines. *(Perfectionnements aux machines à faucher.)*

David Crowell and James Grey Florence Ont 23rd September 1878, for 5 years.

Claim—1st The combination with the main frame A and cam wheel D of the oscillating sliding bar F, bracket J, lever K and connecting bar L, for throwing the bar F in and out of engagement with the cam wheel D, 2nd. The combination with the main frame A and finger bar O of the shoe M and bar Q connectedly hinged as set forth · 3rd The combination with the cutter bar R of the hinged bar S and sliding bar F oscillating as set forth

No. 9179. Process of Curing Fish.

(Procédé de préparation du poisson)

Sumner W. Griffin, Chelsea, Mass., U S., 23rd September, 1878, for 5 years.

Claim.—Salting the fish, removing the bones and skin from the flesh, and subsequently without granulating it and soaking it in brine, subjecting the said flesh to compression in a press, so as to expel the water or surplus brine from and reduce the mass to a cake or cakes.

No. 9180. Improvements on Car Roofs.

(Perfectionnements aux toitures des wagons)

Hiram Aldridge, Chicago, Ill., U.S., 23rd September, 1878, for 5 years.

Claim.—1st. In a car roof wherein metal sheets and wood covering boards are used, the combination of the clamping ridge-board and ridge-beam, and the outer eave beam with spaces between them and the eaves, for the pur-