with a partition p^5, having an opening p^6, in connection with a steam or water jet q, q^1, or both, substantially as set forth. 4th. The stationary furnace n, formed with doors n^1, and n^2, adapted either for liquid or solid fuel or gas, in combination with slides h^4, employed between the furnace n, and the cylinder or retort h, substantially as and for the purpose specified.

No. 41,819. Mower. (*Faucheuse.*)

Francis N. Violet, Milwaukee, and Charles H. Shaw, Wauwatosa, all in Wisconsin, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parallel with said axle, and a triangular lever carried at one corner by a ball bearing on the frame in line with the crank shaft and connected at the outer corners with the crank and with the scythe, substantially as and for the purposes set forth. 2nd. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parallel with said axle, a triangular lever carried at one corner by a ball bearing on the frame in line with said crank shaft and connected at the other corners with the crank and with the scythe, and a rod having a ball and socket connection at its upper end with the frame and hinged at its lower end to said triangular lever in front of its ball bearing, substantially as and for the purposes set forth. 3rd. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parellel with said axle and connected by suitable mechanism with the scythe, and speed multiplying spur gears connecting said crank shaft with the axle on which said supporting wheels are mounted, substantially as and for the purposes set forth. 4th. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parallel with said axle and provided with a sprocket wheel a driving sprocket wheel connected with the sprocket wheel on the crank shaft by a chain belt, and spur gears connecting the driving sprocket with said axle, substantially as and for the purposes set forth. 5th. In a mowing machine, the combination with the inside shoe and the main frame provided with a vertical plate placed parallel with the line of travel of the machine, of a plate to which the shoe is hinged on a horizontal axis parallel with the travel of the machine, pivoted to the front end of the plate on said frame so as to be capable of vertical movement at its rear end, whereby a long bearing is afforded for the shoe carrying plate and the finger bar is rigidly supported, substantially as and for the purposes set forth. 6th. In a mowing machine, the combination with the main frame provided with a vertical bearing plate, set parallel with the line of travel of the machine, a shoe carrying plate pivoted to the front part of the plate on said frame and having a hooked projection embracing the rear edge of said plate, and a lever connected with the rear end of the shoe carrying plate, whereby the finger bar is turned as desired on a longitudinal axis, substantially as and for the purposes set forth. 7th. In a mowing machine, the combination with the main frame provided with a vertical bearing plate parallel with the direction of travel of the machine, a shoe supporting plate pivoted thereto at or near its front end, and a lever connected by a link with the rear end of the shoe carrying plate, said link having a vertically self adjusting connection with one of the parts named, whereby the oscillating of the finger bar to conform to variations in the surface of the ground is permitted, substantially as and for the purposes set forth. 8th. In a mowing machine, the combination with the axle, supporting wheels and main frame having a sleeve at one side which is mounted upon said axle, a crank shaft parallel with the axle, a triangular lever supported at one corner on a ball bearing on said frame in line with said crank shaft, and connected at the other corners with the crank and with the scythe, a suspending rod hinged to said lever, and having a ball and socket connection at its upper end with a suitable support on said frame, and speed multiplying spur gears by which the crank shaft is driven from the axle, substantially as and for the purposes set forth. 9th. In a mowing machine, the combination with the main frame, axle, supporting wheels and cutting apparatus, of a driving gear loosely mounted upon said axle, a clutch by which said gear is engaged and disengaged with said axle, a fork engaging with the sliding member of the clutch, and having a laterally projecting arm which passes loosely through an opening in the gear case or other part of the frame, a spring interposed between said fork and a relatively fixed part of the machine, and tending to hold the clutch members in engagement, and a lever engaging with the lateral arm of said fork, substantially as and for the purposes set forth. 10th. In a mowing machine; the combination with the main frame, supporting wheels and axle upon which they are mounted, of a crank shaft parallel with said axle and provided with a sprocket wheel, a spur driving gear mounted upon said axle, a pinion with which said driving gear engages, and a driving sprocket wheel concentric with said pinion, and connected by a chain belt with the sprocket wheel on the crank shaft, a clutch for engaging and disengaging the driving gear with the axle on which it is mounted, a triangular lever connected at diagonally opposite corners with the crank and with the scythe, and carried at the other corner by a ball bearing on said frame, substantially as and for the purposes set forth. 11th. In a mowing machine, the combination with the frame, of an angular lever connected at diagonally opposite corners with the scythe actuating crank and with the scythe, and at the intermediate corner with the frame, and a vibrating rod by which the forward portion of said lever is suspended from the frame, substantially as and for the purposes set forth. 12th. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a scythe actuating crank on a shaft parallel with the axle, and an angular lever connected at diagonally opposite corners with said crank and with the scythe, and at the intermediate corner by a universal joint with the frame in line with the crank shaft, substantially as and for the purposes set forth.

No. 41,820. Axle Box. (*Boîte à graisse.*)

William Scott Morden, Montague, Michigan, U.S.A., 4th February, 1893; 6 years.

Claim.—The herein described axle box, the same comprising an interiorly screw threaded hub, inner and outer cups screwed into the opposite ends of said hub, the axle passing through the inner end of the inner socket, and a ball upon the end of said axle fitting within the cavity between said cups, as set forth. 2nd. In an axle box, the combination with the interiorly screw threaded hub H, the outer cup O, screwed into the outer end of said hub, and the inner cup I, screwed into the inner end thereof, with a washer W, between the meeting ends of said cups, the inner end of the inner cup having an opening, of the axle A, passing loosely through said opening, a dust guard upon said axle around said opening, and a ball B, rigidly secured to the end of said axle and fitting within the cavity between the cups, as set forth. 3rd. In an axle box, the combination, with the interiorly threaded hub H, and the cup I, screwed therein and having an opening in its inner end surrounded by a grooved flange F, of the axle A, passing loosely through said opening, a ball B, upon said axle upon which ball the cup turns, and a clamp C, clipped to said axle and having a flange *f*, engaging said grooved flange F, substantially as hereinbefore described.

No. 41,821. Carving Machine. (*Machine à sculpter.*)

Thomas L. Smith, Milwaukee, and Paul W. Post, West Superior, all in Wisconsin, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a carving machine, the combination of a rigid vibratory frame suspended on suitable bearings, an oscillatory yoke supported in said suspended frame by bearings in a line parallel with the bearings of said frame, vibratory arms hinged in said yoke on axes transverse to its axis of oscillation, and guiding and cutting tools connected with said vibratory arms, substantially as and for the purposes set forth. 2nd. In a carving machine, the combination of a tool carriage revoluble upon its axis, a guiding and a cutting tool connected therewith, and guiding mechanism connected with said tool carriage, substantially as and for the purpose set forth. 3rd. In a carving machine, the combination of a tool carriage capable of oscillation upon its axis, tool holders having a jointed connection with said carriage, a guiding and a cutting tool adapted to said holders, and guiding mechanism connected with said carriage, substantially as and for the purposes set forth. 4th. In a carving machine, the combination, with a supporting frame and work table, of a rod connected at its ends with said frame by jointed guiding mechanism, a sleeve supported and capable of oscillation upon said rod, tool holders pivotally connected with said sleeve, and a guiding and a cutting tool carried by said tool holders, substantially as and for the purposes set forth. 5th. In a carving machine, the combination, with a suitable supporting frame, of a tool carriage composed of a shaft, and a sleeve capable of oscillation thereon, jointed guiding mechanism having jointed connections with the ends of said carriage shaft and with said frame, screw threaded boxes pivotally attached to said sleeve, screw threaded tool holders adjustable axially in said boxes, and guiding and cutting tools adapted to said tool holders, substantially as and for the purposes set forth. 6th. In a carving machine, the combination, with a suitable supporting frame, of a frame suspended by suitable bearings thereon, an oscillating yoke supported in said suspended frame on suitable bearings, vibratory arms supported by and having jointed connections with said oscillating yoke, a shaft parallel with the axis of said yoke and hinged to the free ends of said vibratory arms, tool holders mounted upon said shaft, and a guiding and a cutting tool adapted to said tool holders, substantially as and for the purposes set forth. 7th. In a carving machine, the combination, with two or more cutting tools, of a guiding tool connected therewith so as to control the movements of said cutting tools, guiding mechanism connecting said tools with a suitable fixed support so as to permit them to be moved in any direction and at the same time to maintain them in the same relative position to each other and to the pattern and work, and driving mechanism arranged to rotate said cutting tools in opposite directions, whereby the tendency of each cutting tool to crawl over the work and to move away from a given position is balanced by the other tool tending in the opposite direction, substantially as and for the purposes set forth. 8th. In a carving machine, the combination, with a rigid vibratory frame hinged in a horizontal line at one side to a suitable support, of a jointed parallelogram having a jointed connection with said vibratory frame in a line parallel with the axis on which said frame swings, and a guiding and a cutting tool connected with the free side of said jointed parallelogram, substantially as and for the purposes set forth. 9th. In a carving machine, the combination, with a suitable supporting frame, of a vibratory frame suspended therefrom by one side, a jointed parallelogram hinged at on side to said