

end supports F by swinging connections, and with body loops H and I attached to them transversely by clips h, as and for the purpose specified and set forth. 3rd. In a buggy or carriage gear, cyma-reversa shaped side springs with swinging connections and hung from either rigid or flexible end supports so formed that, when strained or heavily laden, they will be self-compensating and adjust themselves to suit the load carried, as and for the purpose described and set forth. 4th. In a buggy or carriage gear, tapered single plate cyma-reversa shaped side springs attached to tapered single plate C-springs by swinging connections, and so formed that, when heavily laden, the lower end curves will find a support on the perches, as and for the purpose specified and set forth. 5th. In a buggy or carriage gear, upwardly-curved C-shaped supports made from single steel plates with eyes formed on the upper free ends by rolling the stock in a circle or otherwise, the lower ends being rigidly attached to the axle, perch, head block or head plate, for the purpose of swinging side springs from their free ends. 6th. Receiving cushions m, of rubber or other suitable material, fastened to the perches e, and operating as and for the purpose specified and set forth. 7th. The herein described spring washer consisting of a loop-shaped plate of resilient material inclosing the head plate, wear plates, axle and king-bolt, and a piece or bolt secured between the ends of said loop so as to form a closed link adapted to operate as a safety elevators and double spring washer combined, substantially as set forth. 8th. The combination, with spring head plate C, of the upper wear plate b, with the boss or thimble a passing into the lower wear plate c, which rests on the axle A, forming a solid bearing and preventing wear of the king-bolt and other parts, substantially as specified and set forth. 9th. In a buggy or carriage gear, a draw-jack J as formed and resting on a naked axle and there held in position by the tit p, bolts o and clip bar p, substantially as described and set forth. 10th. The loop-shaped anti-shaft rattler spring fastened at the lower end by the head of bolt o, the upper end passing backwards horizontally below the shaft eye or draw-pin, as described and set forth. 11th. In the connection of side springs with body loop ends, the holes in loop ends having projecting bosses j, and the clip h having inside rounding corners, and a projecting tit r recessed into spring, all fitting together to make a solid connection, as described and set forth. 12th. The formation of a clip h formed from round stock, the same size as the flanks, the bottom of the cross-bar being flat with raised tit i in the centre, the outside corners being square and the inside corners rounding, to suit the parts being clipped together, as described. 13th. In buggy or carriage gears, the bushing of spring eyes with ferrules drawn from sheet brass, substantially as described and set forth. 14th. In a buggy or carriage gear, the bushing of shaft and pole eyes with brass, substantially as described and set forth. 15th. Adjusting the body loops H and I upwards or downwards, to suit the shape of any crooked carriage body, as described. 16th. The cross straps J attached at their lower ends to loops k, which are held in position on the ends of the spring shackle bolts, as and for the purpose specified and described.

## No. 20,132. Machine for making Glassware.

(Machine pour la fabrication de la Verrerie.)

Emil F. Krell, Detroit, Mich., U.S., 4th September, 1884: 5 years.

*Claim.*—1st. The combination, with a revolving frame, of a series of moulds, a series of plungers adapted to be forced into and out of said moulds, mechanism for opening and closing the moulds, and for forcing the plungers into and out of said moulds, substantially as described. 2nd. The combination, with a revolving frame provided with a series of moulds, and a series of plungers adapted to be forced into and out of said moulds and in connection therewith, mechanism for automatically opening and closing said moulds, and for forcing said plungers into and out of said moulds, substantially as described. 3rd. The combination, with a driving shaft provided with a driving pinion, of a revolving frame provided with gear meshing with said pinion, said frame provided with a series of moulds, a series of plungers adapted to be forced into and out of said moulds and in connection therewith, means for opening and closing the moulds and for reciprocating the plungers, substantially as described. 4th. The combination, with a supporting post B, of a revolving frame mounted upon said post, anti-friction rollers D supporting the periphery of said frame, said frame provided with a series of moulds, a series of plungers adapted to be reciprocated therein, and means for automatically opening and closing said moulds and for reciprocating said plungers, substantially as described. 5th. The combination, with a revolving frame provided with a series of moulds, and a series of plungers adapted to be reciprocated therein, of means for automatically opening and closing said moulds, said plungers provided with a gear R adapted to mesh with a stationary segmental gear, for reciprocating said plunger, substantially as described. 6th. The combination, with a revolving frame provided with a series of moulds, and a series of plungers adapted to be reciprocated therein, the stationary elevated frame bearing a segmental gear, said plunger provided with a gear R adapted to engage therewith, as the frame is revolved, for reciprocating the plungers, substantially as described. 7th. The combination, with a revolving frame provided with a series of moulds, of the stationary elevated frame provided with two or more bars H<sub>1</sub> and H<sub>2</sub>, said moulds connected with said frame by the toggle levers I and I<sub>1</sub>, the construction being such that, as the frame is rotated, the moulds will be opened and closed, substantially as and in the manner described. 8th. The combination, with a rotary frame provided with spokes L arranged in parallel pairs, of a series of sliding moulds supported by said spokes, toggle arms I and I<sub>1</sub> connected with said moulds and in addition thereto, an elevated stationary frame provided with two or more bars H<sub>1</sub>, H<sub>2</sub>, the construction being such that, as the frame is rotated, the moulds will be opened and closed, substantially as and in the manner described. 9th. The combination, with a revolving frame supporting a series of moulds, of the toggle arms I and I<sub>1</sub> connected therewith, one of said arms provided with a hook i and in connection therewith, stationary bars H<sub>1</sub>, H<sub>2</sub>, to engage with said toggle arms to open and close the moulds, substantially as and in the manner described. 10th. A rotary frame provided with a driving gear J and a series of spokes L, of a series of moulds and a series of reciprocating plungers, said gear and spokes provided with the removable plates L<sub>2</sub> and J<sub>2</sub>, substantially as described.

11th. The combination, with a series of moulds, of mechanism for rotating the same in succession before the operator, substantially as described. 12th. The combination, with a series of rotating moulds, of a series of plungers adapted to be reciprocated therein, substantially as described. 13th. The combination, with a series of rotating moulds, of mechanism for opening and closing the same and in connection therewith, a series of plungers adapted to be reciprocated in said moulds, substantially as described.

## No. 20,133. Running Gear for Vehicles.

(Train de Voitures.)

John B. Armstrong, Guelph, Ont., 4th September, 1884: 5 years.

*Claim.*—1st. In a buggy gear, steel plate spring perches C rigidly attached to a naked back axle near the shoulders, and converting from the same forward till they cross each other, the ends of same passing to, and being rigidly attached to the extended spring ends of the head plate D, the perches being rigidly connected together at the point of intersection by the clip d or its equivalent, and for the purpose described. 2nd. In a buggy gear, steel spring plate perches crossing each other between the back and front axles, head block or head plate. 3rd. A buggy gear having two C-springs attached at their lower ends to the hind axle, and two C-springs attached at their lower ends to the head block or head plate for the purpose of hanging a buggy body direct from the eyes of their inward free ends on swinging shackles. 4th. A buggy gear having two tapered single plate C-springs rigidly attached at their lower ends to the back axle, and two tapered single plate C-springs rigidly attached at their lower ends to a head block or head plate, for the purpose of hanging a buggy body from the eyes on their inward free ends. 5th. In a buggy gear, the tapered single plate C-springs E resting on the ends of the perches C, and their rigidly attached having their free ends pointing inwardly toward each other, and the spring body loops F hung from the same by free swinging shackles b, all substantially as described and for the purpose set forth. 6th. The arrangement of C-springs E and spring body loops F so that, when heavily laden or vibrating, the loop ends will be received on the cushions a, as and for the purpose described and set forth. 7th. The receiving cushions a made from rubber, or other suitable material, and attached to the perches by a suitable metal strap or clip, as and for the purpose specified and set forth. 8th. The use of metal wedges c for adjusting the height of the body, as described. 9th. Attaching the body loops F to the body sills G by clips H, which pass through metal bearing plates f and g, substantially as described.

## No. 20,134. Bag-Holder and Truck for Carrying the Same.

(Accroche sacs et Camion Porte-sacs.)

Reuben W. James, Bowmanville, Ont., 4th September, 1884: 5 years.

*Claim.*—1st. As an improved bag-holder, pivoted curved fingers D carried in brackets E, in combination with the lever I having an eccentric end for operating the fingers, substantially as and for the purpose specified. 2nd. The curved fingers D pivoted in the brackets E, which are secured to the centre board F, in combination with a bolt G, arranged to secure the said centre board to the frame A, substantially as and for the purpose specified. 3rd. The pivoted curved fingers D operated by the lever I, as specified, in combination with the spout K arranged to extend into the mouth of the bag J, substantially as and for the purpose specified. 4th. The frame A having the bent rod L hinged to it, in combination with the stay M secured at its inner end by the bolt G which fastens the wheel-barrow box H to the frame A, substantially as and for the purpose specified.

## No. 20,135. Machine for Lasting Boots and Shoes.

(Machine à Enformer les Chaussures.)

Hosea P. Aldrich, Somerville, Mass., U.S., 4th September, 1884: 5 years.

*Claim.*—1st. In a lasting machine, the combination of a device for supporting the boot or shoe while being lasted, a mechanism or implement for driving a peg or fastening device loosely suspended above the work, and adapted to be operated by power communicated thereto through a universal coupling or connection, whereby it is adapted to be grasped by the operator with one hand and freely moved thereby over any portion of the work, to drive a peg or fastening device with the power and disconnecting it therefrom, all co-operating substantially in the manner and for the purpose set forth. 2nd. In a lasting machine, a device for supporting the boot or shoe while being lasted, and a mechanism or implement for driving a peg or other fastening device consisting of the frame C, tubes M, plunger bars K and L, springs N and cams g, in combination with gears c, d, m and n with their connections, the shaft H and band wheel 20, all constructed to operate substantially as and for the purpose set forth. 3rd. In a lasting machine, a device for supporting the boot or shoe while being lasted, a mechanism or implement, as described, for driving a peg or other fastening device, the gears c, d, m and n with their connections, as shown, the shaft H and band wheel 20, in combination with the clutch mechanism J, shipper rod 8, spring 21, cord f and treadle I, all constructed to operate substantially as and for the purpose set forth. 4th. In a lasting machine, the combination, with the reciprocating plunger bars K, L, recessed as shown, and their actuating mechanism, of the spring awl and peg driver secured in said recesses in the plunger bars, and arranged to slide in contact with each other, and adapted to move the one out of the way of the other to permit of their alternate passage through a single aperture in the nose piece i, and the cutter n secured to the plunger L, substantially as set forth. 5th. In a lasting machine, the combination, with the reciprocating plunger bars K, L, provided with grooves or recesses i, of the awl d and peg driver g having their upper ends h bent and adapted to fit within the said grooves or recesses i, substantially in the manner and for the purpose de-