

bination of the main frame A hinged upon the axle and tapered to a narrow neck at its forward end, the transverso rigid metal bar bolted rigidly to the forward neck of the main frame and terminating in an eye or socket, for the passage of the bolt upon which the shoe is hinged, and the rigid metal bar I bolted rigidly at its rear end to the main frame near the axle, and extending forward therefrom parallel to the line of draft of the machine and bolted at its front end to the transverso bar II, all said parts constituting a very light, strong, rigid and economical extended frame for the attachment and support of the cutting apparatus, as set forth. 2nd. In the herein described mowing machine, the top frame M having the pole socket Q, the tool box O, the axle or stud 3 projecting from the end of the tool box and serving to support the lifting lever, the ratchet teeth 4 for the engagement of the spring dog of the lifting lever and the seat standard socket, all said parts being cast integral with the frame and arranged with respect to each other as herein shown and described. 3rd. The combination of the finger bar frame, the shoe pivoted thereto having an offset projecting inwardly under a portion of said frame, and having a finger bar projecting outwardly therefrom, and the lever II pivoted beneath the finger bar frame and connected at its longer end to the lifting lever on the main frame, and projecting at its shorter end over the offset of the shoe and adapted to come in contact above its fulcrum with the upper edge of brace E of the finger bar frame, as set forth.

No. 23,743. Apparatus for Generating Heating and Illuminating Gas. (*Apparatus de Production du Gaz de Chauffage et d'Éclairage.*)

James J. Nowell, Adrian, Mich., U.S. 5th April, 1886; 5 years.

Claim.—1st. In an apparatus for generating heating and illuminating gases from atmospheric air, petroleum or other hydrocarbons and superheated steam, the combination of a heating chamber, one or more retorts for decomposing and fixing the gases, an injector and a tubular atomizer of approximately the same length as the retorts, exterior to said chamber in which the petroleum or other hydrocarbons are vaporized and then blended with the steam and air, substantially as described. 2nd. In an apparatus for generating heating and illuminating gases from atmospheric air and petroleum or other hydrocarbons and superheated steam, the combination of a fire chamber with gang-pipes on either side thereof and adjacent thereto, a heating chamber containing a series of retorts to fix the gases, an atomizer of tubular form extending to said chambers, provided with a drip-pipe, and an injector so constructed as to blend the superheated steam and air before the same comes in contact with the hydrocarbon, substantially as described. 3rd. In an apparatus for generating heating and illuminating gases from atmospheric air and petroleum or other hydrocarbons and superheated steam a fire chamber with gang pipes for superheating the steam adjacent thereto, a heating chamber containing a series of retorts, one of which contains a gang of pipes for completing the superheating of the steam, an atomizer, an injector and a test-jet to determine the quality of the gases produced, substantially as described.

No. 23,744. Injector. (*Injecteur.*)

T. McAvity & Sons, (Assignees of William McShane, St. John, N.B., 5th April, 1886; 5 years.

Claim.—1st. The construction of a hollow poppet valve *p* in the delivery chamber *D*₂ of an injector, so that, when the pressure is developed, it will fly to its seat *p*, closing the low pressure overflow (so called) and either working on the outside of the forcing combining tube *d* (and there confined by the nut *a* or other corresponding device) or sliding in the casing *B*, as and for the purpose described. 2nd. In an injector, the construction of a hollow poppet valve *p* with two seats *p*¹ and *p*² in the delivery chamber *D*₂, so that, when the pressure is developed, it will fly to its seats *p*¹ and *p*², closing the low pressure overflow (so called) and preventing any return of water from the pressure or delivery chamber *D*₂, either working on the outside of the forcing combining-tube *d* (and there confined by the nut *a* or corresponding device) or sliding in the casing *B*, as and for the purpose described. 3rd. The combination of the lever *L* with the steam valve *v* in the injector, and the *T* or corresponding overflow valve *r* in the delivery pipe *D*, so that *v* opens before *r* closes, as and for the purpose described. 4th. In an injector, the combination, with the lever *L*, of the lock nut *rs*, as and for the purpose described. 5th. The combination of the lever *L* with the spindle of valve *v*, connected by loose coupling *cs*, and with the standard *e* attached to the casing of the injector, and with the spindle of the valve *r*, by the coupling *ra*, and the swinging link *rs* and movable coupling *rs* as and for the purpose described. 6th. The combination of the steam valve *v* in an injector, and the overflow valve *r* in the delivery pipe, and the lever *L*, with the poppet *p* in the delivery chamber *D*₂, all as and for the purpose described.

No. 23,745. Method of, and Apparatus for Cleaning and Separating the Pulpy Matters from the Fibres of Leaves and Plants. (*Mode de Nettoyage et de Séparation des Matières Pulpeuses des Fibres des Feuilles et Plantes, et Appareil pour cet objet.*)

Delphin E. Theband, New York, (Assignee of John G. Stephens, Brooklyn,) N.Y., U.S., 5th April, 1886; 5 years.

Claim.—1st. The method of separating the pulp of fibrous leaves, stalks and other parts of vegetable substances from the fibres thereof, by carding or combing the same from the said substances suspended in front of, that is to say, the descending side of a carding cylinder or belt, having combing or carding teeth, pins or bristles, substantially in the manner described. 2nd. The method of separating the pulp of fibrous leaves, stalks and other parts of vegetable

substances from the fibres thereof, by carding or combing the same from the said substance suspended in front of the descending side of a carding cylinder or belt, having combing or carding teeth, pins or bristles, and caused to move along the same, substantially in the manner described. 3rd. The method of separating the pulp of fibrous leaves, stalks and other parts of vegetable substances from the fibres thereof, by carding or combing the same from the said substances suspended in front of the descending side of a carding cylinder or belt, having combing or carding teeth, pins or bristles, and caused to move along the same, and also caused to touch or have contact with the card or comb at one end first, and to gradually increase the range of the contact therefrom along the leaves and the cylinder, substantially as described. 4th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of leaves or plants sidewise along the same, of a feeding bar or rail adapted for suspending the leaves or plants in the described relation with, and feeding them along said cylinder, as herein set forth. 5th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of leaves or plants sidewise along the same, of a feeding bar or rail and suspending clutches thereon, adapted for suspending the leaves or plants in the described relation with, and feeding them along said cylinder, as herein set forth. 6th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of the leaves or plants sidewise along the same, of a feeding guard or shield adapted to cause the leaves or plants to touch the card first at their points, and to gradually increase the range of the contact along said leaves or plants and the cylinder or belt, substantially as described. 7th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of the leaves or plants sidewise along the same, of a feeding guard or shield adapted to cause the leaves or plants to touch the card first at their points, and to gradually increase the range of the contact along said leaves or plants and the cylinder or belt, also to feed the leaves or other vegetable substances along the cylinder or belt in said suspended condition, substantially as described. 8th. The combination, with a carding or combing cylinder or belt having combing or carding teeth, pins or bristles, of mechanism contrived to hold and suspend the leaves, stalks or other parts of vegetable fibre-bearing substances in front of the descending side of the cylinder or belt, to be carded or combed thereby, as specified. 9th. The combination, with a carding or combing cylinder or belt having combing or carding teeth, pins or bristles, of mechanism contrived to hold and suspend the leaves, stalks or other parts of vegetable fibre-bearing substances in front of the descending side of the cylinder or belt, also to feed the same along the cylinder, and also mechanism contrived to cause the leaves or other parts to touch the card first at their points, and to gradually increase the range of the contact from the points of the leaves along said leaves or other parts, and the cylinder or belt, substantially as described. 10th. The combination, with a carding or combing cylinder or belt having combing or carding teeth, pins or bristles, of mechanism contrived to hold and suspend the leaves, stalks or other parts of vegetable fibre-bearing substances in front of the descending side of the cylinder or belt, also to feed the same along the cylinder, and also mechanism contrived to cause the leaves or other parts to touch the card first at their points, and to gradually increase the range of the contact from the points of the leaves along said leaves or other parts, and the cylinder or belt, substantially as described. 11th. The combination, of feeding chains *d*, having clutches *l*, *m*, and grooved guides *n*, *o*, with the card cylinder *a*, or belt *a*², having combing or carding teeth, pins or bristles, substantially as described. 12th. The combination of feeding chains *d* having clutches *l*, *m*, and grooved guides *n*, *o*, with carding or combing cylinder *a*, or belt *a*², having the shield *b*, substantially as described. 13th. The combination of the two feeding chains *d* having clutches *l*, *m*, and grooved guides *n*, *o*, with the cylinder *a*, or belt *a*², having the cone or a curved guide *h*, to guide the leaves on to the shield *b*, substantially as described. 14th. The combination of the feeding apron *f*, feeding chains *d*, and depressing roller *g*, with the card cylinder *a*, or belt *a*², having combing or carding teeth or pins, substantially as described. 15th. The combination, with the carding cylinder *a*, or belt *a*², having combing or carding teeth, pins or bristles, of the feeding chains *d* adapted to suspend and carry the leaves or plants along the same, and the shifting rolls adapted to grip and shift the leaves or plants in the carrying chains and with relation to the cylinder or belt, substantially as described. 16th. The combination of chains *d*, having clutches *l*, *m*, and grooved guides *n*, *o* one of which is adjustable with the carding cylinder *a*, or belt *a*², substantially as described. 17th. The combination of a card cylinder or belt leaf, or a stalk-carrying and suspending mechanism adapted to carry the leaves laterally along the cylinder or belt, and water sprinklers or jet apparatus adapted to lubricate and wash the cards or combs, and the fibres, while the carding or combing is in progress, substantially as described.

No. 23,746. Clip for Fastening Teeth on Harrows, etc. (*Lien pour Assujétir les Dents des Herse, etc.*)

William J. Copp, (assignee of James McCreath,) Hamilton, Ont., 5th April, 1886; 5 years.

Claim.—The clip *A*, bull *G*, bolt *D*, and nut *I*, as described and shown, in combination with the beam or bar *F* for fastening the teeth *H* on harrows, cultivators, ploughs or other implements, substantially as herein set forth.

No. 23,747. Safety Gate for Swing Bridges. (*Barrière de Sécurité pour Ponts-Lévis.*)

Henry Marcheter and Theodore Martin, Wallacburgh, Ont., 5th April, 1886; 5 years.

Claim.—1st. The combination of the lever *B* with the roller *H*, and the wheel *E* with the chain *D*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the bearer *I*, on the end of the swing, substantially for the purpose hereinbefore set forth.