to the wheel rim, and screwing on an axle or axle box provided with right and left hand screw threads, whereby the hub sections, by turning the axle, will be brought closer together to tighten the spokes and take up looseness in the wheels, as set forth 2nd. A wheel having two hub sections E, E1 connected by spokes to the wheel rim or felly C, and sleeved on an axle box A having right and left hand screw threads, and nuts F, F1 screwing on opposite ends of the hub sections inwardly, whereby the radius of the spokes will be shortened and looseness in the wheel taken up, as set forth. 3rd A wheel having two hub sections E, E1 connected by spokes to a rim or felly C, and means for drawing or forcing the hub sections inwardly to tighten the wheel, as set forth. 4th. A wheel in which the spokes are tightened by closing the hub sections inwardly, as set forth.

No. 24,690. Hay Rack. (*Râtelier à Foin.*)

Benjamin Tanner, Sturgis, Mich., U.S, 10th August, 1886, 5 years.

Claim—The combination of the bed-timbers, the rack-sections, one of which is secured to one end of the bed-timbers, and the other adapted to slide back and forth thereon, for the purpose of lengthening or shortening the rack, and the blocks H, R, secured to the sections and extending under and supporting the bed-timbers, said blocks being adapted to rest upon the bolsters of a running gear, substantially as described.

No. 24,691. Manufacture of Glucose.

(*Fabrication de la Glucose.*)

Alfred Soyberlich and Alexander Trampedach, Riga, Russia, 10th August, 1886; 5 years.

Claim—1st. In the manufacture of grape sugar, the saccharification of the starch by diluted nitric acid, and the regeneration of the remaining sirup containing nitric acid by adding sulphuric acid thereto. 2nd. In the manufacture of grape sugar, obtaining solutions of starch-sugar by means of nitric and sulphuric acids, or combinations of such, and treating said starch-sugar with caustic or carbonaceous alkalies or alkaline earths in quantity, in order to obtain an alkaline sugary solution in which the sugar-crystals are easily and completely separated by centrifugal action.

No. 24,692. Manufacture of Explosives.

(*Fabrication des Mélanges Explosibles.*)

David Johnson, South Hampstead, Eng., 10th August, 1886; 5 years.

Claim.—1st. The hardening and rendering dense of nitro cellulose, and preferably dinitro cellulose, by the admixture of a camphor solution or its specified equivalent, for the purpose of regulating the energy of action or combustibility of the explosive, substantially as set forth. 2nd. The herein-described improvement in the art of making from nitro cellulose, and preferably dinitro cellulose, an explosive having any required degree of hardness, density and combustibility, which consists in mixing the nitro cellulose with an oxidizing agent forming the composition into the required size grains or blocks, saturating the same with a camphor solution or its equivalent, as specified, and lastly removing the solvent and the camphor therefrom, substantially as set forth. 3rd. The herein described improvement or process for making from nitro cellulose and preferably dinitro cellulose, an explosive having any required degree of hardness, density and combustibility, which consists in mixing the nitro cellulose with an oxidizing agent and with a suitable carbonaceous material forming the composition into the required size, grains or blocks, saturating the same with a camphor solution, or its equivalent, as specified, and lastly removing the solvent and the camphor therefrom, substantially as set forth. 4th. Compressed blocks of nitro cellulose, which has been rendered hard by treatment with camphor or its specified equivalent, substantially as and for the purpose set forth. 5th Compressed grains of nitro cellulose, which has been rendered hard by treatment with camphor or its equivalent, as specified substantially as set forth. 6th. Gunpowder for sporting and military fire-arms made from nitro cellulose, which has been rendered hard by treatment with camphor or its specified equivalent, substantially as set forth.

No. 24,693. Combination Wash Bench.

(*Banc de Buanderie à Combinaison.*)

Desmond Beaudry, Montreal, Que., 10th August, 1886; 5 years.

Claim.—1st. The combination of the top A, standards B having the hinges *a* and trusses *c*, and the bar E, substantially as shown and described and for the purpose set forth. 2nd The combination of the back board hinged to the extension board C, and the extension board C hinged to the bench top A, with the folding standards B and the bar E, as shewn and and for the purpose set forth. 3rd. The combination of the standards *f*, formed on the trussed folding standards B, and provided with the screws *e*, with the arms *d* pivoted to the extension board C, and provided with the socket holes *f*, and with hooks on their ends to take over the screws *e*, substantially as and for the purpose set forth. 4th. The combination, of the drying rods *g* and the rack *k* attached to the back board D, with the arms *d* provided with the socket holes *f*, pivoted to the extension board C and hooked to the standards *f*, substantially in the manner shown and for the purpose set forth. 5th. The combination of the shirk board F, having the rib *h* and the clamp *s*, with the back board D, extension board C, wash-bench top A, and trussed folding standards B, all substantially as shown and described and for the purpose set forth.

No. 24,694. Art of Measuring and Weighing Grain, etc., and Apparatus therefor. (*Mode de Mesurage et Pesage des Grains, etc., et Appareil pour cet objet.*)

Henry Pooley and Son, (assignees of Eugene O'Brien,) Liverpool, Eng., 10th August, 1886; 5 years.

Claim.—1st. The method, substantially herein described, of weighing granular and pulverous substances, which method consists in opening and closing the doors or dampers by which the substance is alternately admitted, and closed to the weighing receptacles of machines of the type described, the make-weight being effected by an automatic device such as that herein described, as and for the purposes set forth. 2nd. In weighing machines of the type herein described, effecting the main filling of the weighing receptacles by doors or dampers (such as herein described), operating substantially as and for the purposes set forth. 3rd. The combination, in weighing machines, of the type herein described, of doors such as *d*, *d*, operated as herein described, and a make weight device such as the spouts *e*, *e*1, operated as herein described, substantially, as and for the purposes set forth. 4th. In weighing machines of the type herein described, effecting the cutting off of the supply of the make-weight delivery by an automatically operated device, such as herein described, substantially as and for the purposes set forth. 5th. In weighing machines of the type herein described, an automatically operated mechanism for locking and releasing the tilting doors thereof, consisting substantially of a lever such as *h*, links and levers, such as *i*, *i* and *k*, *k*, and an actuating device, such as the pin *h*2, and tappet *p* or its equivalent, as and for the purposes set forth 6th. In a weighing machine of the type herein described, the combination of a filling device consisting of doors or dampers operated as described, an automatically operated make-weight device, such as described, a device for locking and releasing the tilting doors, such as described, and a device for locking and releasing the weigh-beam, such as described, substantially as and for the purposes set forth. 7th. The means, substantially herein described, by which the capacity of weighing receptacles may be varied, consisting of an adjustable device, such as *a*, or its equivalent, substantially as set forth. 8th. In combination with weighing receptacles of machines of the type herein described, the displacing devices, such as *a*, as and for the purposes set forth. 9th In weighing machines of the type herein described, effecting the locking of the weigh-beam through mechanism operated by the working of the filling doors or dampers, substantially as and for the purposes set forth. 10th. In a weigh-beam locking mechanism, the combination of doors, such as *d*, *d*1, pins S1, S4, rods S2, lever S1, bar S and weigh-beam A, substantially as set forth for the purposes specified. 11th The automatic make-weight mechanism, constructed and arranged substantially as set forth, with reference to the drawings consisting of a cut-off *f*, operating as described. 12th. The shoot D, slide doors or dampers *d*, *d*1, weighing receptacles 1 and 2, and make-weight mechanism, arranged and constructed substantially as set forth with reference to the drawings. 13th. The shutter N, in combination with the cut-off device *e*, *e*1 and *f*, as and for the purposes set forth. 14th. The slides *a* and operating mechanism *a*1 and *a*2, arranged and constructed substantially as set forth with reference to the drawings.

No. 24,695. Feed Mill. (*Moulin à Blé.*)

Tomas C. Cadwgan, Benjamin F. K. Jennings, John F. Hoy and John J. Goodfellow, Springfield, Ohio, U. S., 10th August, 1886, 5 years.

Claim.—1st. In a feed mill, the combination of a crusher, a fixed and an adjustable grinding ring, and a grinding-wheel rotating in a vertical plane between said grinding-rings, said grinding-wheel being free to move horizontally on its shaft, and to adjust itself to the grinding surfaces of the ring on either side of the same, as set forth. 2nd. In a grinding mill, the combination of the two grinding rings, one being fixed and the other provided with means for adjustment, and the wheel rotating in a vertical plane between said grinding rings, with a grinding surface on either side of the same, and having a central opening therein to allow the material to be carried to said grinding surfaces, said grinding-wheel being free to move in either direction in the inner of its shaft, and thereby adjust itself to the grinding surface of both said grinding-rings, substantially as set forth. 3rd In a grinding mill, the combination of the cylindrical case, with an extended sleeve central thereon, a horizontal shaft provided with spines having a bearing in said sleeve, a fixed grinding-ring on one side of the case, a grinding-ring with means for adjustment attached thereto on the opposite side, and an open spoked grinding-wheel rotating between the fixed and the adjustable grinding rings, said grinding-wheel being free to move toward either grinding-ring on said shaft, and provided with scrapers projecting from either side of its rim into the spaces within the case outside said grinding-rings, substantially as and for the purpose hereinbefore set forth. 4th. In a grinding-mill, the combination of a cylindrical case, with a sleeve cast central thereon, a horizontal shaft having a bearing in the latter, an open self-adjustable grinding-wheel rotating with said shaft, a fixed grinding ring on the inner side of the same, a grinding-ring on the outer side, and means for effecting the adjustment of the latter in either direction in the line of said shaft, consisting of a sliding frame and a screw engaging the end of said sleeve, as set forth.

No. 24,696. Fire-Escape. (*Sauveteur d'Incendie.*)

The Dittrick Fire Escape Company, (assignee of John Dittrick,) Perth, Ont., 10th August, 1886; 5 years.

Claim.—1st. The combination, with the frame A, shaft C, spur-wheel E and pinion F, of the shaft D, pinion G, spur-wheel H, drums I, J, fan wheel K, fan case L and cables M, N, reversely wound on said drums, substantially as and for the purpose set forth. 2nd. The rotary spool S, subdivided by notched partition T, in combination with shaft C carrying pinion G, spur wheel H, drums I, J, fan wheel K and fan case L, substantially as and for the purpose set forth. 3rd. Pulleys O and P, with deep flanges, metal handle or chain W, substantially as and for the purpose set forth.

No. 24,697. Rein Guard for Whiffletrees.

(*Garde-Guide pour Palonniers.*)

Samuel R. B. Pingree, (assignee of Horace Libby,) Lewiston, Me., U. S., 10th August, 1886; 5 years.

Claim.—A whiffletree-guard attached to the top side of the cross-