nitro-cellulose either alone or compounded as described to the production of leather cloth, artificial leather and varnishes, substantially as herein set forth.

No. 21,474. Sash Lock. (*Arrête-Croisée.*)

Seth A. Brown, Buffalo, N.Y., U.S., 21st April, 1885; 5 years.

Claim.—A sash lock, consisting of the pressing plate B having the parallel arms C, C, provided with the projections *f, f*, in combination with a cam lever A, having the eccentric portion or cam A^1, and a boss or projection D, the latter being concentric to the pivot G, and provided with a depression or recess E, on its opposite side to receive the screw-head.

No. 21,475. Water Heater and Circulator. (*Calorifère à Eau.*)

Peter Smith, Detroit, Mich., U.S., 21st April, 1885; 15 years.

Claim.—1st. A water heater and circulator, consisting of an upright furnace with an inclosing water jacket, a conduit-leading into the jacket from the outside of the furnace, a coil arranged within the furnace and having one terminal connected with the water jacket, and the other leading directly to the outside of the furnace, and adapted for connecting with a water conveying pipe, and an escape pipe for air affording a communication between the jacket and the riser pipe, substantially as described. 2nd. In a water heater and circulator *r*, constructed and operating substantially as described, an air pipe communicating between the water jacket at its highest point and the riser pipe, in combination with a compression drum, substantially as and for the purposes specified.

No. 21,476. Circular Sawing Machine. (*Scierie à Scies Circulaires.*)

George J. Kautz, Beechwood, Pa., U.S., 21st April, 1885; 5 years.

Claim.—1st. The combination, with the lever Q, pivoted at S to the frame, and connected at its free end to the chain T, which passes under an idler below the lever, and over a chain pulley or sprocket wheel on the shaft of the feed-roller D, above the lever Q, of the cam P, mounted on shaft K, for operating lever Q, and devices connected therewith, substantially as described. 2nd. The combination of the feed-roller D, on the shaft of which is mounted loosely a chain pulley or sprocket wheel V, having pivoted thereto pawls X, an internal ratchet wheel Y, keyed upon the shaft of the said feed-roller D adjacent to said sprocket wheel, and pawls X, a chain I running upon said sprocket wheel V and over an idler U and pivoted cam-operated lever Q below the table, substantially as set forth. 3rd. The combination of the shaft K, provided with the cams L, P, the former for operating the swinging saw-frame, and the latter for operating the pivoted lever Q, connected with the chain T passing under idler U and over loose chain-pulley V on the shaft of the feed-roller D with the fixed internal ratchet wheel Y keyed upon said shaft and engaging the pawls X and suitable gearing for operating the shaft K and the saw, substantially as set forth. 4th. The combination of the shaft K, carrying the cams L, P, mounted respectively below the swinging saw-frame, and pivoted lever Q, and said shaft K also provided with cog-wheel O, with the shaft M provided with pinion N gearing with wheel O, and with a driving pulley for operating said shaft M, and the pulleys G, H on the saw-frame shaft and saw-arbor respectively by belts passing over the same, substantially as set forth.

No. 21,477. Engine Governor. (*Gouverneur de Machine.*)

John P. Simmons, San Francisco, Cal., U. S., 21st April, 1885; 5 years.

Claim. 1st. In a governor, the eccentric fitted loosely to the main engine shaft, and the curved weighted arms connected with the hub of the eccentric by straps attached to the arms, and to segments, so as to rotate it when turned outward, by centrifugal action, the said segments having a returning-spring coiled around said pins, as herein set forth. 2nd. In a governor, the eccentric loosely fitted to the main engine-shaft, the pivoted and curved weighted arms, connected with the hub of the eccentric, so as to rotate it when thrown outward by centrifugal action, and the arcs or segments connected with opposite sides of the eccentric, these segments being also made eccentric to their journal-pins, and having springs coiled around said pin to return them as the centrifugal force decreases, as herein described. 3rd. In a governor, the eccentric turning loosely upon the main engine shaft, and having a hub connected with the curved weighted arms, so as to rotate it in one direction, when turned outward by centrifugal action, and eccentric segments connected with opposite sides of the hub by straps, with coiled spring J upon their pins to resist the centrifugal action of the weights and return the hub and eccentric to its first position as the centrifugal power decreases, in combination with an adjusting tension-screw connected with the spring and passing through lugs on the arms of the disk and nuts L, as herein described. 4th. In a governor, the eccentric loosely fitted to main engine-shaft, the pivoted and curved weighted arms connected with the hub of the eccentric, so as to rotate it when thrown outward by centrifugal force, and the arcs or segments connected with opposite sides of the eccentric, in the eccentric to these journal-pins and adjustable with reference thereto, substantially as herein described.

No. 21,478. Article of Manufacture for Panels for Joinery, etc., from Wood Paper Pulp. (*Article de Fabrique pour Panneaux de Menuiserie, etc., en Pâte à Papier de Bois.*)

Simon X. Cimon, Malbaie, Que., 21st April, 1885; 5 years.

Claim.- As a new article of manufacture, a panels for doors and joiner's work, formed of paper pulp, made waterproof and coloured, if required, substantially as described and for the purpose set forth.

No. 21,479. Steam Vacuum Pump. (*Pompe à Vapeur à Vide.*)

George H Nye, Chicago, Ill., U.S., 21st April, 1885; 5 years.

Claim.—1st. In steam vacuum pumps for elevating water, the case A, L^1, K, constructed with the pipe attachments R, S, openings 1, 4 communicating with the valve chamber and pipes R, S, the annular grooves *d, d, m*, steam pipe C, and partition N, in combination with the valve having the four cut-offs J, L, L, J, spaces *a, a', a* between them and holes *c, c*, through the heads J, J, for alternately directing steam into the cylinders B, D, as and for the purpose hereinbefore specified. 2nd. The valve case A, L^1, K, and valve E, constructed as specified, in combination with the steam chambers *e, e*, in the heads L^1, K, for shifting the valve, as specified. 3rd. The valve E, valve-case A, L^1, K, and pipes S, R, constructed substantially as specified, in combination with the cylinders B, D, pipes H, H, with valves L, L placed above them and at their intersection with the pipe F, also in combination to bring the steam below the discharging water, all substantially as and for the purpose specified.

No. 21,480. Wheel Expander. (*Appareil pour Etendre les Roues.*)

William Campbell, Detroit, Mich., U.S., 21st April, 1885; 5 years.

Claim.—The combination, with the rim and spoke of a wheel, the clip or plate C, having a hub *e* formed thereon, ferule *d* fitting on the end of the spoke, plate E, and expander screw *b*, the parts being constructed and operating substantially as and for the purposes described.

No. 21,481. Combined Harrow and Seeder. (*Herse-Semoir.*)

Jay S. Corbin, Gouverneur, N.Y., U.S., 21st April, 1885; 5 years.

Claim—1st. The combination, substantially as set forth, of the seeding devices, the disk gangs and the levelling devices. 2nd. The combination, substantially as set forth, of the frame, the disk gangs, the seeding devices arranged to drop the seed in front of the cutting disks, and the levelling devices which act on the soil in rear of the disks. 3rd. The combination, substantially as set forth, of the frame, the series of cutting disks arranged across the line of draft, and a leveller which acts on the sail in rear of the cutting disks. 4th. The combination, substantially as set forth, of the main frame, the disks gangs arranged on opposite sides of the machine transversely to the line of drafts, mechanism for changing the angle of the gangs relatively to the line of draft, a seed box and seeding devices carried on the main frame, mechanism for driving the seeding devices from one of the disk gangs, and compensating devices acting on said driving mechanism to compensate for the variation in the positions of the disk gangs. 5th. The combination, substantially as set forth, of the main frame, the disks gangs arranged on opposite sides of the central draft line, mechanism for varying the angle of the gangs relatively to the line of draft, a seed box and seeding devices carried on the frame, the sprocket driving wheel on one of the gang shafts a similar on the seed shaft and an elastic compensating pulley over which the driving chain passes. 6th. The combination, substantially as set forth, of the disk gang, the sprocket wheel thereon, the driving chain and the dirt-discharge opening in the sprocket wheel. 7th. A sprocket wheel, substantially as described, formed with openings leading from the bottom of the depression or chain socket, in the periphery of the wheel, to the side of the wheel. 8th. The combination, substantially as set forth, of the frame a series of cutting disks arranged transversely to the line of draft, and the vertically yielding or elastic supporting wheel. 9th. The combination, substantially as set forth, of the main frame, the disk gangs arranged on opposite sides of the central line of the machine transversely to the line of draft, and the supporting wheel arranged between the inner ends of the disks gangs. 10th. The combination, substantially as set forth, of the frame, a series of cutting disks arranged transversely to the line of draft, a supporting wheel and mechanism for varying the relation of the supporting wheel relatively to the cutting disks, and consequently the amount of weight on the disks. 11th. The combination, substantially as set forth, of the frame, the cutting disks arranged transversely to the line of draft, the vertical yielding supporting wheel, and mechanism for adjusting said wheel vertically relatively to the disks. 12th The combination, substantially as set forth, of the frame, the cutting disks, the supporting wheel, the hinged bracket in which the standard of the supporting wheel is mounted, and the spring which normally presses the wheel down upon the soil. 13th. The combination, substantially as set forth, of the frame, the disk gangs and the detachable or separable scroper beam S. 14th. The combination, substantially as set forth, of the frame, the disk gangs, the hangers in which the gangs have their bearings, the scroper beams removably supported upon the disk gangs and the pins which retain the scroper trams in position. 15th. The combination, substantially as set forth, of a disk gang, and a scroper beam supported so as to slide endwise directly upon the thimbles of the disk gang. 16th. The combination, substantially as set forth, of the scroper bar, with reversible scraper-teeth mounted therein. 17th. The combination, substantially as set forth, of the thimble having the collar or flange intermediate of its length, the journal box which envelops the sleeve and is provided with a recess or chamber in which the thimble works, and anti-friction balls placed in said chamber. 18th. The combination, substantially as set forth, of the thimble, the journal box, the conically-shaped flanges on the ends of the thimble, and the correspondingly shaped sand-bands. 19th. The combination, substantially as set forth, of the hanger (B^1), the disk gangs, the journal box carried by the hanger, the lug or projection on the upper side of the journal box, and the elongated slot in the hanger. 20th. The combination, substantially as set forth, of the thimble having a flange intermediate of its length, the enveloping journal box having a chamber in which the flange, and anti-friction balls work, the conically-shaped flanges on the ends of the thimble, and the correspondingly conical sand-bands. 21st. The combination, substantially as set forth, of the frame, the disk gangs arranged on opposite sides of the pole, a lever