No. 27,156. Art or Process of Gelatinizing Nitro-Glycerine. (*Art de convertir en gélatine la nitro-glycerine.*)

Heinrich Dulitz, Duren, Germany, 12th July, 1887; 5 years.

Claim.—The process of gelatinizing nitro-glycerine with nitrated cellulose by means of an addition of picric acid (trinitrophenal or trinitrophenic acid), substantially as described.

No. 27,157. Wood Cutting Machine.

(*Machine à couper le bois de placage.*)

Thomas S. Crane, Brick Church, N.J., U.S., 12th July, 1887; 5 years.

Claim.—1st. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, and a rotary crank and connecting rod pivoted to such carrier, and crank to regulate the stroke of the piston rod and carrier, substantially as shown and described. 2nd. In a veneer cutting machine, the combination, with a knife-carrier, a knife thereon and ways to guide the knife-carrier, of a stay log fed intermittently toward the knife, a piston rod actuated by steam pressure to reciprocate the carrier, a rotary shaft having a crank with crank-pin secured thereon, and a connecting rod pivoted to the knife carrier and to the said crank pin, and operating by the reciprocating movement of the carrier to rotate the crank shaft, as and for the purpose set forth. 3rd. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank connected with such carrier bp a pivoted connecting rod, and means independent of the reciprocating piston rod for rotating such crank, as and for the purpose set forth. 4th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a piston rod actuated by a piston of suitable power to operate the knife, a crank connected with such carrier by a pivoted connecting rod, and an auxiliary engine for rotating the crank and of suitable power to turn the crank at the centres, substantially as herein set forth. 5th. In a veneer cutting machine, the combination with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank connected with such carrier by a pivoted connecting rod, and an auxiliary engiue connected with the said crank by a detachable clutch mechanism, as and for the purpose set forth. 6th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank connected with such carrier by a pivoted connecting rod, a cog-wheel having shaft connected with said crank, an intermediate shaft provided with pinion, and with clutch pulley, and an auxiliary engine connected with such clutch pulley, as and for the purpose set forth. 7th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, a cam upon the crank shaft, and feeding mechanism operated by said cam to actuate the stay log intermittently, as and for the purpose set forth. 8th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, two screws journalled in bearings and fitted to nuts upon the stay log, sprocket wheels upon such screws, and a chain for connecting them together, a cam npon the crank shaft, and a variable feeding mechanism operated by the cam to actuate the screws, as and for the purpose set forth. 9th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, screws journalled in bearings and fitted to nuts upon the stay log, detachable feed mechanism applied to such screws, means for connecting the screws to rotate together, a friction pulley upon one of said screws, and a rotating friction wheel, with means for pressing it against such friction pulley to retract the stay log, when the feeding mechanism is detached. 10th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier screws journalled in bearings and fitted to nuts npon the stay log, detachable feed mechanism applied to such screws, means for connecting the screws to rotate together, a friction pulley upon one of said screws, two frictional wheels rotated in opposite directions, and means for pressing either of them at pleasure upon the friction pulley, as and for the purpose set forth. 11th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, screws journalled in bearings and fitted to nuts upon the stay log, detachable feed mechanism applied to such screws, means for connecting the screws to rotate together, a friction pulley upon one of said screws, an auxiliary engine detachably connected with the crank shaft, and two friction wheels rotated in opposite directions by said auxiliary engine, and means for pressing either of them at pleasure upon the friction pulley, as and for the purpose set forth. 12th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, screws fitted to nuts upon the stay log sleeves, threaded externally and mounted in threaded bearings, and having the screws journalled therein with shoulders to prevent longitudinal movement, feed mechanism applied to such screws, and means for actuating such feed mechanism and for oscillating the threaded sleeves at the opposite ends of the knife carriers stroke, as and for the purpose set forth. 13th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary shaft and crank connected with such carrier by a pivoted connecting rod, an auxiliary engine connected with the said crank by a detachable clutch mechanism, a rotary brake wheel connected with the crank shaft, means as a weight for throwing the brake automatically into operation, and a hand lever connected with the clutch mechanism and with the brake mechanism, and operated, substantially as described, to detach the brake and apply the clutch, as and for the purpose set forth.

No. 27,158. Steam Generator.

(*Générateur de vapeur.*)

William H. Farris, Rock Island, Ill., U.S., 13th July, 1887; 5 years.

Claim.—1st. In a steam generator, the combination, with a boiler, steam generating grate bars, and a hollow bridge-wall provided with a water receiving and a steam discharging chamber, of an independent water conducting pipe leading from the boiler to the said water receiving chamber of the bridge-wall, and a steam conducting pipe leading from the steam discharging chamber of the bridge-wall to the boiler, substantially as set forth. 2nd. In a steam generator, the combination, with a boiler, hollow steam generating, grate bars, and a hollow bridge-wall provided with a water receiving and a steam discharging chamber, the outlet from the water receiving chamber being only through tubes leading therefrom into the interiors of the hollow grate-bars, of a water conducting pipe leading from the boiler to the water receiving chamber of the bridge-wall, and a steam conducting pipe leading from the steam discharging chamber of the bridge-wall to the boiler, substantially as set forth. 3rd. In a steam generator, the combination, with a boiler, a bridge-wall provided with a water receiving and a steam discharging chamber, and hollow grate-bars through which the chambers in the bridge-wall communicate with each other, of a water connecting pipe leading from the boiler to the bridge-wall outside of the fire-space, and a steam conducting pipe leading from the bridge-wall to the boiler, substantially as set forth. 4th. In a steam generator, the combination, with the boiler and the bridge-wall provided with a water receiving and a steam discharging chamber, communicating with each other through the hollow grate-bars, of a water conducting pipe leading from the boiler to the bridge-wall outside of the fire-space, and a steam conducting pipe leading from the bridge-wall to the boiler and passing through the fire-space, substantially as set forth. 5th. In a steam-generator, the combination, with the bridge-wall with its water receiving and steam discharging chamber, of the water conducting pipe leading from the boiler to the bridge-wall outside the fire-space, and the steam conducting pipes leading from the bridge-wall to the boiler along the sides of and within the fire-space, substantially as set forth. 6th. The combination, with the steam generating grate-bars, and the bridge-wall with its water chamber and its steam chamber, of the independent water conducting pipe and the steam conducting pipes leading from separate points of the steam chamber and uniting in a common steam inlet pipe, substantially as set forth. 7th. The combination, with the steam generating grate-bars and the bridge-wall with its water chamber and its steam chambers, of the independent water conducting pipe with its stop valves and check valves, the steam conducting and generating pipes communicating freely with each other, and having a common steam inlet pipe leading to the boiler, and the check valve located in the common steam inlet pipe, substantially as set forth. 8th. The combination, with the steam conducting tubes leading from the steam chamber of the bridge-wall through the fire-space and thence to the boiler, of the compression joints between the tubes and the bridge-wall, the draw-rods for tightening the joints, the slotted lugs located at the side of the openings into the steam chamber, and the draw-rods with their heads and squared portions adapted to engage the lug, substantially as set forth. 9th. A steam generating bridge-wall, consisting essentially of a lower hollow section and an upper hollow section, the sections being connected together in a slightly tilting or rocking adjustment by a steam-tight joint, substantially as set forth. 10th. The bridge-wall consisting essentially of the rearwardly tilting hollow upper section, the two-chambered lower section, the two sections communicating with each other and being detachable from each other, substantially as set forth. 11th. A steam generating bridge-wall, composed of hollow sections united by a steam-tight compression joint, through which the sections communicate with each other, substantially as set forth. 12th. The combination, with the lower section of the bridge-wall, with its water and steam chambers, and the hollow grate bars communicating with the steam chamber direct, and with the water chamber through a circulating tube, of the upper bridge-wall section with its auxiliary steam chamber, in communication with the steam chamber of the lower section, and the steam conducting pipes leading from the steam chamber in the upper section to the boiler, substantially as set forth.

No. 27,159. Roofing Plate. (*Bardeau métallique.*)

Archibald McKillop, London, Ont., 13th July, 1887; 5 years.

Claim.—1st. A roofing plate having one of its margins bent to form the underlap a_1, and its opposite margin forming the double lap b_1 and over reaching portion c_1, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of a metallic roofing plate, having the double lap b_1, underlap a_1, and nails d_1 with the roofing boards B, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a metallic roofing plate, of the body A having the underlap a_1, and its opposite edge folded over with the clips e, substantially as herein shown and described.

No. 27,160 Butter Tub. (*Tinette.*)

James McAdam, Postville, Iowa, U.S., 13th July, 1887; 5 years.

Claim.—1st. In a butter tub, the combination, with a pail or tub provided with tongues, of a cover having its free edge bent into a groove or channel fitting over the rim of the tub, and then turned outward into a flange or projection provided with slots through which the tongues pass in use, substantially as described. 2nd. In a butter tub, the combination, with a pail or tub provided with tongues rivetted thereto with one rivet, of a cover having its free edge bent into a groove or channel fitting over the rim of the tub, and then turned outward into a flange or projection provided with slots through which the tongues pass in use, substantially as described. 3rd. In a butter