

of the front guides, and the stationary dividers located between the breaking and cleaning frames to divide the hemp longitudinally in its passage to the cleaners, substantially as described. 22nd. The combination of the feed rolls, the breaker frame, the stationary guides in front and rear of said frame, the dividers in rear of the breaker frame, the stationary and vibratory cleaner frames, and the conveyor located above the stationary cleaner frame, substantially as described.

No. 38,397. Method of Making Key Boards.

(*Méthode de fabriquer des claviers.*)

William Carl Zeidler, Toronto, Ontario, Canada, and Augustus Newell, Chicago, Illinois, U.S.A., 3rd March, 1892; 5 years.

Claim.—The herein described method of manufacturing key boards for pianos and organs, which method consists in applying a sheet of celluloid and a wooden blank face to face with an adhesive interposed between them, then bending said blank and celluloid with the convexity on the side of the celluloid, then subjecting the celluloid and blank to pressure while so bent until the adhesive and celluloid are set, then releasing the blank and celluloid from pressure and allowing the celluloid to shrink, substantially as shown and described.

No. 38,398. Protector for Closet Seats.

(*Protecteur pour sièges de latrines.*)

Thomas Avery Swann, Baltimore, Maryland, U.S.A., 3rd March, 1892; 5 years.

Claim.—A pocket closet seat protector of material impervious to water, and of substantially triangular form, having a main portion A, adapted to lie along the front of the seat, a flap α , adapted to be folded upon the underside of the part A, and the end flaps α' , substantially as set forth. 2nd. A pocket closet seat protector of material impervious to water, and of substantially triangular form, having a main portion A, adapted to lie along the front of the seat and permanently provided with short pointed tacks C, having the flap α , adapted to extend down by the front edge of the seat or to be folded upon the underside of said part A, and having the end flaps α' , substantially as set forth. 3rd. A folding pocket seat protector having pointed securing tacks adapted to hold the device in place during use, and to be covered by folding the protector, substantially as set forth.

No. 38,399. Apparatus for Playing Duplicate Whist.

(*Appareil pour jouer le double whist.*)

Cassius M. Paine, Milwaukee, Wisconsin, and James L. Sebring, Kalamazoo, Michigan, both in U.S.A., 3rd March, 1892; 5 years.

Claim.—1st. A tray for the game of duplicate whist, provided with four holders arranged to retain the several hands of the original play by themselves and in order for the duplicate play, substantially as and for the purposes set forth. 2nd. A tray for the game of duplicate whist, having four holders arranged to retain the original hands separate and in order for the duplicate play, and an indicator designating the proper position of the tray for the duplicate play with reference to the original play, substantially as and for the purposes set forth. 3rd. A tray for the game of duplicate whist, having four holders arranged to retain the original hands separate and in order for the duplicate play, an indicator denoting the proper position of the tray with reference to the players, and an index designating the leading hand, substantially as and for the purposes set forth. 4th. A tray for the game of duplicate whist, having four holders arranged to retain the original hands separate and in order for the duplicate play, said holders consisting of elastic bands extending over the edges of the tray toward the center thereof, and attached to the tray at their ends, substantially as and for the purposes set forth. 5th. A series of trays for the game of duplicate whist, having marks on the back to distinguish the individual trays, each tray being provided with four holders arranged to retain the original hands separate and in order for the duplicate play, an indicator denoting the proper position of the tray with reference to the players, and an index designating the leading hand, substantially as and for the purposes set forth.

No. 38,400. Steam Engine. (*Machine à vapeur.*)

Ransford W. Basom, Pittsburg, Kansas, U.S.A., 4th March, 1892; 5 years.

Claim.—1st. In a steam engine, a cylindrical valve chamber open at both ends, in combination with a hollow or tubular exteriorly screw threaded reciprocating valve stem closed at both ends, four piston heads interiorly screw threaded and adjustably mounted, respectively, near the ends and near the center of said valve stem, ports or openings formed in the latter between the two upper and the two lower piston heads, respectively, and connecting the upper and lower compartments formed by said piston heads, exhaust and live steam pipes connected with the valve chamber, to register, respectively, with the central and with one of the communicating chambers formed by the piston heads upon the valve stem, and a port connecting the valve chamber with each of a pair of single act-

ing cylinders, substantially as and for the purpose set forth. 2nd. The combination, with a pair of single acting cylinders closed at their upper ends and having the reciprocating pistons, of the single ports connecting the upper ends of said cylinders with a valve chamber open at both ends, a valve arranged to reciprocate in said chamber and having a tubular exteriorly screw threaded stem and four interiorly screw threaded adjustable heads or pistons forming two end compartments that communicate through said tubular stem and a central separate compartment, and the exhaust and the live steam pipes connected, respectively, to the said central and to one of the said communicating compartments, substantially as set forth. 3rd. In a steam engine, the combination of two pairs of vertical cylinders arranged centrally over a single crank shaft and having closed upper ends, the reciprocating pistons, the pitmen connecting the pistons of each pair of cylinders with diametrically opposite cranks, the cranks of the two pairs being disposed at right angles to each other, two cylindrical valve chambers open at both ends, single ports connecting the upper end of each cylinder with one of said valve chambers, the reciprocating valves arranged in said valve chambers and comprising each a tubular stem and four heads or pistons forming two end compartments that communicate through said tubular stem and a central separate compartment, the exhaust and live steam pipes connected, respectively, to the said central and to one of the said communicating compartments, and the pitmen connecting the valves with eccentrics upon the crank shaft, substantially as set forth. 4th. In an engine, the combination, with a cylindrical casing open at both ends, of a reciprocating valve comprising two communicating end compartments and a separate central or intermediate compartment formed by the walls of the casing, and discs or pistons mounted so as to be longitudinally adjustable upon the valve stem, said casing being provided with suitably located openings for the admission and escape of steam and for its passage to and from the cylinders, and said valve stem being provided with a longitudinal opening having ports whereby communication is established between the end compartments, substantially as set forth.

No. 38,401. Thill Coupler. (*Arçon de limonière.*)

Archibald Paul, Cohoes, New York, U. S. A., 4th March, 1892; 5 years.

Claim.—1st. In a thill-coupling, the combination of a clip, a thill-iron having a conical eye therein, the adjustable sleeve fitted in one of the arms of the clip and having the inner conical or tapered end fitted snugly in said thill-iron, and the interior screw-threads at its outer end, and a bolt passing through the clip and sleeve, engaging the screw-threads in said sleeve, and having a nut which bears against the outer end of the sleeve, substantially as described. 2nd. In a thill-coupling, the combination of a clip, a thill-iron having a conical eye therein, a sleeve passing through one of the clips, with its tapered inner end fitting in the eye of the thill-iron and having the interior screw-threads at its outer end, a bolt passing through one arm of the clip and screwed into the threaded end of the sleeve and having the threaded portion 13 near its head, and a spring arranged to straddle an arm of the clip and having a slotted end fitted loosely on the bolt and a threaded eye at its opposite end, into which eye the threaded portion 13 of the bolt is screwed, substantially as described.

No. 38,402. Nut Lock. (*Arrête-écrou.*)

Joseph Broadly, Elkhorn, Manitoba, Canada, 4th March, 1892; 5 years.

Claim.—1st. The combination, with a pair of rotary parts, turning one upon or within the other, having one or more longitudinal grooves on their engaging surfaces, of a locking piece or strip insertible in said grooves, when in registration, adapted to frictionally lock the said parts together when either is turned so that the grooves are out of registration. 2nd. The combination, with a screw-threaded bolt and a screw-threaded nut having longitudinal grooves on their engaging surfaces, of a locking piece or strip insertible within the grooves, when in registration, adapted to frictionally lock the nut to the bolt, when either is turned, so that the grooves are out of registration. 3rd. The combination, with a pair of rotary parts, turning one upon or within the other, having longitudinal grooves on their engaging surfaces, of a locking piece or strip composed of soft metal insertible within said grooves when in registration, adapted to be crushed between said parts, when either is turned so that the grooves are out of registration, substantially as and for the purpose set forth. 4th. The combination, with the screw-threaded bolt A, having the groove α , of the nut B, having the groove b , and the locking strip C, composed of soft metal, arrangeable and operating substantially as described.

No. 38,403. Flour Bolt. (*Blutoir.*)

Charles Aloyes Schied, Rochester, New York, U.S.A., 4th March, 1892; 5 years.

Claim.—The combination, with the heater C, consisting of one stationary and one turning head, and connecting slats, of the coupling k , sliding on the shaft D, provided with teeth that engage with teeth of the turning head, and the spring m attached to the shaft and locking the coupling in place, as herein shown and described.