## No, 14,969. Improvements in Processes and Machinery for Manufacturing Cut Nails. (*Perfectionnements dans les procédés et appareils de fabrication du clou coupé.*)

David Farmer, John P. Farmer and Samuel Farmer, Penn Yan, N,Y., U.S., 15th June, 1882; for 5 years.

*Claim.*—1st. As an improvement in the art of making cut nails and tacks, the process of rolling plates with transverse ridges and depressions, cutting these up into transversely tapered nail plates, with the fibre produced by previous rolling crosswise to said nail plates, feeding such nail plates to the nail machine, without the usual oscillation or alternate inversion, and heading in customary cut nail or tack machinery. 2nd. The rolls constructed and combined as described, for producing nail plates required in carrying out the process specified. 3rd. A tranversely tapered plate, for the manufacture of cut nails and tacks, having the fibre crosswise of said plate and in direction of the taper.

## No. 14,970. Improvements on Harvesters and Binders. (*Perfectionnements aux moissonneuses-lieuses.*)

The Toronto Reaper and Mower Company, Toronto, Ont., (Assignee of William N. Whiteley and William Bayley, Springfield, Ohio., U.S.,) 15th June, 1882; for 5 years.

*Claim.*—1st. The combination of an angle iron cutter bar with a self-adjusting platform belt having its fixed and adjustable bearings sustained directly by the upper flange of said angle iron cutter bar. 2nd. The combination of an angle iron cutter bar $I_3$, self-adjusting platform belt $B_3$ and a butter $D_3$. 3rd. The combination of a rotary packer J to convey the grain from the terminus of an elevator E, and pack it against the vanes *l* of the self-starting device, and thereby connect the binding with the harvesting mechanism. 4th. In a binding machine, the centre wheel R that transmits motion in a direct manner to all the moving parts of the binding apparatus. 5th. A centre wheel R that gives motion in a direct manner to all the moving parts of a binding machine provided with a mutilation in which works the adjustable section Q constructed to be lifted out, or to be lowered into gear, with driving pinion O. 6th. The combination of a wheel R that gives a vibrating motion to a binder arm *m*, shaft *r* connecting rod *x* and arm U and segments $o^5$ $C_5$ for giving the desired motion to a knotting device. 7th. The combination of a wheel R that communicates a vibrating motion to a binder arm *m*, shaft *r*, connecting rod *x* and arm W, provided with one or more tracks $w^1$, for opening or closing the gripers of the knotter, and holder and cutting device. 8th. The combination of a wheel R, that imparts a direct vibrating motion to a binder arm shaft *r* provided with a track $N_3$ on its outer edge with starter $g^1$, for throwing a divider wheel *s* T into or out of gear with it, at any desired time. 9th. The combination of a wheel R that gives a direct vibratory motion to a binder arm shaft provided with a crank *i* for giving vibratory motion to an ejecter shaft *s*, through the agency of connecting rod J. 10th. A wheel R giving motion directly to a knotter pinion $c_5$ mutilated and provided with a suitable starting device for throwing it into, or out of gear, with pinion O. 11th. A wheel R giving motion directly to a tyer or knotter pinion $c^5$ provided with a track $N_3$ and starter $g^1$ on its periphery, for throwing a divider wheel S T into, or out of gear with it, at any desired time. 12th. A wheel R provided with tracks $w^1$ for operating the gripers and knife of the cutting, holding and knotting mechanism, mutilated and provided with a suitable starting device for throwing it into, or out of gear, with pinion O. 13th. A wheel R provided with tracks $w^1$, for operating the knotting device provided with a track $N_3$ and a starter $g^1$ around its periphery, for throwing a divider wheel S T into or out of gear with it. 14th. A binding mechanism in which the relative positions of the binder arm *m* and divider *k*, when at rest, will cause the point of the binder arm to stand above the binding table, to hold back the incoming grain, and the divider *k* to stand directly above the flow of the incoming grain so as to be ready to pierce through it the instant the binding mechanism is started, so as to accurately seize the sheaf, and the binder arm to retreat below the table to allow the sheaf to pass over it. 15th. The combination of a continuously running binder arm *m* with an intermittently running divider *k* so arranged that the binder arm retreats below the table, in advance of the grain the divider is bringing in, reaches the extreme of its vibratory movement and commences to return and being met by the divider, moves up the side of it, and thereby keeps the division of grain which the divider has made. 16th. The combination of the compress arm $C_3$ $c_3$ $d_3$ and $e_3$. 17th. A knotter and griper provided with an overhanging cone-shaped hood $a^{10}$, to insure the delivery of the binding cord to the griper $d_4$. 18th. The adjustable tension device $t_2$ on the arm *m*, for the purpose of enabling the binding mechanism to make one or more revolutions while empty, without freeing the band from its retaining griper 19th. A folding ejector composed of a vibrating arm carrying a folding arm *n* and latch $e_6$, and moved directly from the binder arm shaft by means of the segments $d_6$ $c_6$. 20th. The combination of an ejector and compress finger working in relative time to each other, so that the bound sheaf is positively forced out of the binder, while the compress finger is opening, and is as positively held down while the compress finger returns to assist in compressing the new sheaf. 21st. A folding ejector so arranged and constructed that it is folded down in front of the unbound sheaf, while it is being brought into the embrace of the compress, then passes underneath it while the compress finger is closing on it, and reaching the limit of its backward stroke behind the sheaf returns in an erect position and conducts the then bound sheaf to the edge of the binding table and folds over it to keep it down.

## No. 14,971. Improvements on Barbed Fences. (*Perfectionnements aux clôtures barbelées.*)

Joseph W. Harbaugh and William J. Patterson, Lawrence, Ks., U.S., 15th June, 1882; for 5 years.

*Claim.*—The rails A A provided or formed on the outer sides with re-inforcing central and edge ribs C $C^1$ $C_{11}$, the outer or edge ribs being cut at alternate intervals to each other, and the two ends thus formed bent at right angles to the rail, in opposite directions to each other, to forms barbs B B.

## No. 14,972. Improvements in Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 15th June, 1882; for 5 years.

*Claim*—1st. The combination, with the finger beam, of a bar or rod connected at one end to the finger beam near the post, or inner end of the beam, and at its other end to a bracket situated upon and attached to the finger beam at a point outside of the rake standard, and provided with a nut, or its equivalent, arranged to exert a pushing strain on the said bar for the purpose of bracing the finger beam at the point where the rake jack is carried. 2nd. The combination, with the finger beam, of a bar or rod connected at one end to the finger beam, at or near the inner end thereof, and extending obliquely in an upward direction to a point above the finger beam and near the rake standard, at which point it is adjustably connected to the finger beam, in combination with a nut screwed upon the rod, or any other suitable mechanical device, by which a pushing strain can be exerted through the rod upon the two points connecting it to the finger beam, for the purpose of bracing the latter at the point where the rake jack is carried. 3rd. A bar or rod supported in a suitable bracket attached to the top side of the finger beam near its inner end, and extending to a bracket also attached to the top side of the finger beam, but situated on the outside of the rake standard, in combination with adjusting mechanism arranged to exert through the rod a pushing strain upon the two points connecting it to the finger beam for the purpose of bracing the latter at the point where the rake jack is carried. 4th. A bar or rod rigidly attached to the inner end of the finger beam, and extending therefrom to a bracket attached to the finger beam outside of the rake standard, in combination with nuts I $I_1$ screwed upon the rod and arranged to jam against the bracket F.

## No. 14,973. Improvements on Valve Gears for Engines. (*Perfectionnements aux appareils de soupapes pour les machines à vapeur.*)

Frederick B. Rice, Dunkirk, N. Y., U.S., 16th June, 1882; for 5 years.

*Claim.*—1st. A moving eccentric pin $J_1$, arm J, pin or rock shaft I carried by, and within an opening through the crank disk or a crank pin $I_1$, in combination with a governor arranged within said disk.

## No. 14,974. Improvements on Steps for Vertical Shafting. (*Perfectionnements aux coussinets des arbres verticaux.*)

William Crowe, Boston, Mass., U.S., 16th June, 1882; for 5 years.

*Claim.*—1st. The step B, balls D and plate E provided with the stud C, in combination with the shaft A provided with the chamber *d*. 2nd. The step B provided with the stud C, chamber *a* and balls D, in combination with the shaft A provided with the chamber *d*.

## No. 14,975. Self-Registering Tally. (*Compteur automatique.*)

John W. Elliott, Toronto, Ont., 16th June, 1882; for 5 years.

*Claim.*—1st. A spindle F suspended within a cylindrical casing, and having at one of its ends a pointed crank H, in combination with a pivoted spring pawl M, acting against the notched block I, so that at each vertical movement of the spindle the pointed crank is caused to move a given distance in a circle. 2nd. In a tally consisting of a spindle with a pointed crank so arranged within a casing that, at each vertical movement of the spindle, the pointed crank is caused to revolve a given distance in a circle, the combination of a vertical spring L acting against the flattened edge of the block I, in order to prevent the spindle revolving when it is being forced down. 3rd. In a tally consisting of a spindle with a pointed crank so arranged within a casing that, at each vertical movement of the spindle, the pointed crank is caused to revolve a given distance in a circle, the combination of a card divided into spaces and held on the base plate of an adjustable frame arranged to support the casing E.

## No. 14,976. Improvement in Black Leaf Check Books. (*Perfectionnement des livrets de contrôle à feuilles noires.*)

Alexander Gardner, Toronto, Ont., 16th June, 1882; for 5 years.

*Claim.*—1st. A copying check book, constructing the same with a stationary black (or other color) impression leaf A, in the centre of the book, and one half of the leaves paged from it backwards to the front, and the other half of the leaves or duplicates paged consecutively from it forward to the end. 2nd. In a copying check book, the combination of the impression leaf A affixed at the centre of the book, and the forward leaves B and back leaves *c* paged as shown.

## No. 14,977. Improvements on Tubular Lanterns. (*Perfectionnements aux lanternes tubulaires.*)

John H. Stone, Hamilton, Ont., 19th June, 1882; for 5 years.

*Claim.*—1st. A perforated movable tube or cylinder E inside of an air chamber B, at the top of a globe or lantern, the same being affixed to the movable bottom *a* of the air chamber and having attached, by vertical strips c c, an anular ring D to surround the globe C as a globe holder. 2nd. A spiral spring I surrounding the perforated tube or cylinder E inside of the air chamber B for the purpose of pressure on the ring D, or globe holder as specified. 3rd. In combination with the air chamber B of a tubular lantern, a perforated movable cylinder or tube E to which is attached a globe holder D, the cylinder being surrounded with a spiral spring I inside of air chamber, for the purpose of obtaining pressure on the globe to hold it in its place, also the