car. 4th. The combination, with a device for unloading cars, of a jack connected thereto for elevating it above the platform of the car. 5th. A device for unloading cars from one side only, the same being provided with a suitable nose casting at its forward end. 6th. The combination, with a device for unloading cars from one side only at a time, of a rail detachably connected to the side of the car platform, to form a track for such device. 7th. The combination, with a device for unloading cars, of a rail secured to the platform thereof, the same having at its ends.

No. 12,537. Improvements on Mining Machines. (*Perfectionnements aux machines à miner.*)

Francis M. Lechner, Waynesburg, and Joseph A. Jeffry, Columbus, Ohio, U.S., 23rd March, 1881; (re-issue of Patent No. 7,092.)

Claim.—1st. A rotating horizontal cutter shaft mounted at a right angle, in front of a sliding supporting frame, whereby said cutter shaft is placed upon a line parallel with the breast of coal, and may be advanced into said breast of coal upon a path made by said cutter shaft, at a right angle thereto. 2nd. A rotating horizontal cutter shaft arranged at a right angle to its supporting frame, in combination with a driving chain arranged on a line parallel with the sliding carriers. 3rd. A rotating horizontal cutter shaft mounted at the front end of a sliding carrier frame, which is advanced into the coal with the cutter shaft, in combination with shoes attached to the sliding carrier frame to support the cutters and frame against downward thrust. 4th. A rotating horizontal cutter shaft, provided with cutting teeth, and mount d as the front end of a sliding carrier frame, in combination with shoes arranged to support the front end of the carrier frame against downward thrust. 5th. The combination, with a rotating horizontal cutter shaft and its sliding carriers, of guides attached to the carriers to support them against the upward thrust produced by the cutters. 6th. The combination, with a rotating horizontal cutter shaft and its carriers, of cutting spurs attached to the carriers, to cut out the coal in front of the shaft bearings. 7th. The combination, in a mining machine, of the posts B_2 B_2, sliding frame G, shafts E F and chain F_1. 8th. The combination, with the bed frame and the sliding carriers, of the feeding screw shaft N, block N_1 and driving chain M, operated from the main driving shaft. 9th. The combination of the cutter shaft C, shafts E T and chains F_1 and E_2. 10th. The combination of the stationary frame, the sliding carriers supporting the cutting apparatus and its driving mechanism, and a feeding device for advancing the cutters into the coal. 11th. The combination of the adjustable frame G and the feeding screw A having one end adjustable upon the bed frame.

No. 12,538. Improvements on Windows.

(*Perfectionnements aux croisées.*)

William West, sr., and John Lord, Toronto, Ont., 23rd March, 1881; (Extension of Patent No. 5,875).

No. 12,539. Improvements on Combined Harrows and Clod Crushers. (*Perfectionnements aux herses brise-mottes.*)

Frederick Niskwitz, Millington, N. J., U. S., 23rd March, 1881; for 5 years.

Claim.—1st. The combination of the leveller, or clod crusher, the rigid tongue, the gang bar with cultivating devices in rear of the leveller, and the drivers seat mounted on the leveller or tongue, and overhanging the gang-bar. 2nd. The combination of the leveller or clod-crusher, the rigid tongue, the hinged gang bar or cultivator frame provided with the cultivating devices and hinged in rear of the leveller, the driver's seat overhanging the gang-bar, and supported on a standard secured to the leveller, or tongue and means for adjusting the gang-bar and leveller relatively to each other and for securing them as adjusted.

No. 12,540. Improvements on Potato-Diggers. (*Perfectionnements aux arrache-patates.*)

Garret Seger and Bernhart Bernet, Buffalo, N.Y., U. S., 23rd March, 1881; for 5 years.

Claim.—1st. The combination of the frames A A, open digger frames *a a*, point a^1, fingers *b b b* and supplementary forked frame *c c c*, fingers b^1 b^1 b^1. 2nd. In combination with a potato-digger, the swinging vine catching hook D D pivoted to the beam or front part of the digger frame. 3rd. The combination of the frames A A, open fingers b^1 b^1 b^1 and pivoted vine catcher, D D.

No. 12,541. Improvements on Grain-Binders.

(*Perfectionnements aux lieuses à grain.*)

D. M. Osborne and Company, Auburn, N.Y., (Assignee of Andrew C. Miller, Sparta, Ill.), U.S., 26th March, 1881; for 5 years.

Claim.—1st. The combination of the knotting devices supported on a vertically pivoted, horizontally oscillating arm. 2nd. The knotting devices supported on the vertically pivoted, horizontally oscillating arm, in combination with a vertically oscillating and swinging cord carrying arm. 3rd. The knotting devices carried on the vertically pivoted horizontally oscillating arm, the vertically oscillating and swinging cord carrying arm, in combination with a horizontal slotted grain receiving table. 4th. The knotting devices carried on the vertically pivoted horizontally oscillating arm, the vertically oscillating and swinging cord carrying arm, the slotted grain receiving table, in combination with the inclined way on the surface of the table. 5th. The knotting devices carried by the vertically pivoted horizontally oscillating arm, in combination with the fixed switch frame having a segment gear for imparting rotary motion to the knotters spindle. 6th. The knotting devices carried by the vertically pivoted, horizontally oscillating arm, in combination with a fixed switch frame having a cam way for imparting a vertical up-and-down movement to the cord-holder carried on the horizontally oscillating arm. 7th. The combination of the knotting devices carried on the vertically pivoted, horizontally oscillating arm, the cord-holder pivoted to and receiving its horizontal movements from the arm, and its vertical movements from the switch frame, a vertically pivoted switch for opening the jaws of the cord-holder, and a spring for closing the same. 8th. The cord holder pivoted to the horizontally oscillating arm by one end, so as to admit of a vertical movement of its other end, in combination with a fixed vertically slotted guide piece for its moving end. 9th. The combination of the vertical hollow knotter spindle and its horizontally hinged hook with the vertically pivoted cord frame. 10th. The combination of the vertical hollow knotter spindle and its horizontally hinged hook with the vertically carrying arm. 11th. The combination of the vertical hollow knotter spindle, the hook hinged thereto, the cord finger and the vertically oscillating cord-holder. 12th. In combination with the hollow knotter spindle and its hook, the connecting rod pivoted to the hook and united by trunnion connections with its operating devices. 13th. The combination of the hollow knotter spindle and its hook connecting rod, and its trunnion connections with the double armed pivoted lever X^1 and roller Y supported on the horizontally oscillating arm, a cam way or track *e e* on the fixed switch frame, for operating the hook *r*. 14th. The hollow knotter shaft and its pinion knotter hook connecting rod and its operating devices, and the intermediate gear wheels supported by the horizontally oscillating arm, in combination with the sector gear on the fixed switch frame. 15th. The hollow knotter shaft, its hook and operating devices, the cord finger l^1, lever m_1, link *n*, lever n^1 and pivoted switch *o* for operating the same, the whole arranged and combined as described. 16th. The cord-holder, its movable jaw, the knife with the link *b* having a cross-head b_1 with the link *e*, pivoted lever *f* and pivoted switch i^1, arranged and combined as described. 17th. The pressure plate, in combination with the bail on the cord-holder, for holding the cord when released by the jaws of the cord-holder. 18th. The combination of the cord finger, the pressure plate and the bail on the cord-holder. 19th. The combination with the grain elevating and discharging aprons, a horizontal slotted grain receiving table located outside of, and below the discharging ends of the aprons, a vertically pivoted horizontally oscillating arm arranged below said platform and carrying a hollow vertically rotating knotter spindle and hook, a vertically oscillating card-holder controlled, in its vertical movements, by a fixed cam-way, a vertically oscillating and swinging cord carrying arm hinged to the axis of the horizontally oscillating arm, the whole being arranged by joint operation. 20th. The combination of the vertically rotating knotter, the vertically oscillating cord holder and the oscillating take-up. 21st. The combination of the vertically rotating knotter shaft supported by an arm oscillating on a horizontal axis, a vertically oscillating and swinging cord carrying arm hinged to the same axis, a vertically oscillating cord-holder, and the take up K supported in the extension J^1 of pitman H^1. 22nd. The combination of the knotter plate O, the horizontal knotter carrying arm, the vertically oscillating and swinging cord carrying arm, the vertically oscillating cord-holder, and the vertically pivoted cord finger l^1. 23rd. The knotting devices mounted on a horizontally oscillating arm supported on a vertical axis, the vertically oscillating and swinging cord carrying arm hinged to the upper end of the same axis, the lever hinged to the lower end of the same axis, its other end pivoted radially to rotating gear wheel R and connected by pitman H_1 to cord carrying arm G, the whole combined for joint operation. 24th. The combination of the take-up K supported on the pitman extension, the sheaves K^1 L M M_1, with the cord carrying arm and cord-holder V. 25th. The combination of the intermediate gear wheels on a stud, and their mutilated hub with the ribs on the switch frame as a stop and holder for the same. 26th. The knotter shaft and its pinion, the intermediate gear wheels on a stud, and the sector gear on the switch frame, and ribs and stops for holding the same arranged and combined for joint operation. 27th. The removable knotting devices and the removable switch frame and its devices so combined with the horizontally oscillating knotter carrying arm, binder frame and their operating mechanism, that the same may be removed, and a wire twisting and holding and cutting mechanism substituted in the place of the knotting mechanism, and a switch frame carrying a different mechanism for operating the wire twisting, holding and cutting devices substituted in place of switch frame carrying the operating devices for the knotter, the whole being arranged and combined for the purpose of changing the binder from a cord tying to a wire twisting machine.

No. 12,542. Improvements in Ladders.

(*Perfectionnements aux échelles.*)

William A. Boyd, Strathroy, Ont., 26th March, 1881; for 5 years.

Claim.—The ladder *v v k k d d k k* combined or detached by means of adjustable hinges *n n* when each ladder is divided into upper and lower sections *v v* A A A A K K *d d* A A K K A A fitting into one another by tongues and grooves for the purpose of lengthening or shortening the ladder combined with the windlass "C" and its connections *c h h*, and the ratchets and dogs *o o*, the movable and adjustable platform F, the base stays *i i* and the wheels S S attached to the front ladder for detached use.

No. 12,543. Improvements on Grinding Mills.

(*Perfectionnements aux moulins à moudre.*)

Théodule Michaut, St. Paul, Minn., U.S., 26th March, 1881; for 5 years.

Claim.—1st. The combination with the grinders B C, of the board N, hoods O, spring P, perforated board G and lever T. 2nd. The combination, with the runner C having openings, and the perforated steel plates G, of the top board N forming an air chamber, and the plates O having springs P, and racks and spring pawls Q R S.

No. 12,544. Improvements on Plastic Compounds. (*Perfectionnements aux composés plastiques.*)

Arthur T. Woodward, New York, U.S., 26th March, 1881; for 5 years.

Claim.—The plastic compound composed of pulverized silica, such as flint, glass or sand, and a mineral or vegetable resin or pitch intimately mixed therewith, either with or without boiled linseed oil, or other drying oil, or turpentine or benzine, and in the approximate proportions specified.

No. 12,545. Medicine for the Cure of Diphtheria. (*Medécine pour la guérison de la diphthérie.*)

Henry W. Leeson, Normandy, Ont., 26th March, 1881; for 5 years.

Claim.—A composition of matter composed of gold thread, lobelia, red pepper and bonesett, soaked in malt whiskey or other liquor, and strained for use.