No. 7788. Improvements on Potato Diggers.

(Perfectionnements aux arrache-patates.)

Lewis A. Aspinwall, London, England, 18th August, 1877, for 5 years.

Claim.—1st. The employment of the flat separator I; 2nd. The employment of the flat separator I and supported at one side; 3rd. The separator I in combination with the spade D.

No. 7789. Improvements on Electric Telephony.

(Perfectionnements à la téléphonie électrique.)

Alexander G. Bell, Boston, Mass., U.S., 22nd August, 1877, for 5 years.

Claim.—1st. The union upon and by means of an electric circuit of two or more instruments, so that if motion of any kind or form be produced in any way in the armature of any one of the said instruments, the armatures of all the other instruments upon the same circuit will be moved in like manner and form, and if such motion be produced in the former by sound, like sound will be produced by the motion of the latter; 2nd. A system of electric telegraphy or telephony consisting of transmitting and receiving instruments united upon an electric circuit, the production in the armature of each receiving instrument of any given motion by subjecting said armature to an attraction varying in intensity; however such variation may be produced in the magnet or the production of any given sound or sounds from the armature of the receiving instrument, by subjecting said armature to an attraction varying in intensity in such manner as to throw the armature into that form of vibration which characterizes the given sound or sounds; 3rd. The combination with an electro-magnet of a plate of iron or steel, or other material capable of inductive action, which can be thrown into vibration by the movement of surrounding air or by the attraction of a magnet; 4th. The combination with a plate and an electro-magnet, of means whereby the relative position of the two may be adjusted so that without touching they may be set as closely together as possible; 5th. The formation, in an electric telephone, of a magnet with a coil upon the end or ends of the magnet nearest the plate; 6th. The combination with an electric-telephone of a sounding box; 7th. In combination with an electric-telephone, the employment of a speaking or hearing tube for conveying sounds to or from the telephone; 8th. In a system of electric telephony, the combination of a permanent magnet and a plate of iron or steel, or other material capable of inductive action, with coils placed upon the end or ends of said magnet nearest the plate; 9th. In a telephone, the magnet being arranged within the handle portion.

No. 7790. Window Screen. *(Ecran de fenêtre.)*

James C. Walker, John H. Ryal and James W. Corry, Detroit, Mich., U.S., 22nd August, 1877, for 5 years.

Claim—The combination of the hollow automatic roller having telescopic extension piece E, sockets *b b* with dove-tailed grooves *a a*, side plates C C, rod D, screen F, metallic strips H having openings C C, sash in combination with screen having hooks *d d* and metallic strips I.

No. 7791. Improvement in Fanning Mills.

(Perfectionnement dans les tarrares.)

Andrew W. Kendrick and Charles T. Kendrick, Brooklyn, N.Y., U.S., 22nd August, 1877, for 5 years.

Claim.—1st. The wheel Q and pins R, in combination with the cam guides Z and lever T, for giving motion to the screens of grain and seed separators; 2nd. The adjustable horizontally vibrating lever W pierced with holes in a line crossing its centre provided with the embedded nut, the U-formed clevis X and the bolt T; 3rd. The combination of the wheel Q provided with projections R, the lever provided with cam track L, the lever provided with perforations, embedded nut, clevis X and bolt Y, the adjustable connecting rod N provided with the thread and thumb nuts, and the screens C and *x*; 4th. The adjustable and removable supporting block E, formed with grooves to receive and support the screens, and the slot for the reception of a fastening bolt provided with a thumb nut; 5th The combination with the screen frames of the horizontally vibrating lever W having the perforations, the embedded nut, the U-formed clevis X rigidly attached to its under side and having its upper part fitting over the screen frame to confine it from vertical motion, the parts being pivotally connected by bolt Y; 6th. The combination with the projecting screen supports *d* of an adjustable inclined screen or screens C and *x* having an offset or shoulder at each side plated with iron adapted to strike said blocks in the motion of screens; 7th. The combination of the projecting screen supports *d*, the screen or screens having the shoulders or offsets at the sides plated with iron, the adjustable horizontally vibrating lever W provided with the perforations, the embedded nut, the rigid clevis and the pivot bolt; 8th. The flexible hanger made of three pieces of strap or sheet metal connected rigidly together in Y-form and having the upper end of the Y rigidly secured to the casing of the mill and the lower end to the shoe; 9th. The adjustable and reversible screening box L provided with the pivoted cleats P at its sides and a smooth imperforate bottom adapted for use as a chess board; 10th. The adjustable chess board and deflector M provided with guard or fender M_1 and pivoted cleats P_1; 11th. The fan doors or valves *r* constructed in sections hinged together, one section being supported upon the other and adapted to open laterally; 12th. The portion disc O of the fan arranged to fit accurately within the drum and divided into two air compartments while allowing the free rotation of the fan; 13th. The combination with the partition disc O slotted to receive and carry the fan wings, of the fan wings A_1 convex in cross section in the direction of rotation; 14th. The detachable doubly inclined spout N_1 covered with coarse wire net work and provided with arms B_1 secured to the spout above the net work and serving both as a means of attachment to the nest of screens and as fenders for guiding off the coarse impurities; 15th. The adjustable supporting screws S for steadying and bevelling the mill formed with a conical point and annular shoulder or offset.

No. 7792. Instrument for Drawing Ships' Lines. *(Instrument pour tirer les lignes des navires.)*

Robert D. Duthie, Aberdeen, Scotland, 22nd August, 1877, for 5 years.

Claim.—The construction and use of an improved draughting board supported on brackets and fitted with horizontal slide bar and slide and vertical tracing slide or bar.

No. 7793. Improvements on Steering Apparatus. *(Perfectionnements aux appareils à gouverner.)*

Charles H. Herson, Lord's Cove, N.B., 22nd August, 1877, for 5 years.

Claim.—The combination with the rudder post B of the platform E, tiller F having bifurcated stems I, steering wheel J having screw core hub J, and screw rod L secured fixedly at the ends whereby, by the movement of the wheel, the steersman's position coincides with the movement of the rudder.

No. 7794. Machine for Separating and Scouring Wheat. *(Machine à séparer et nettoyer le blé.)*

Hiram J. Livergood, Brantford, Ont., 22nd August, 1877, for 5 years.

Claim.—1st. The suction fan B B so constructed that it sucks from both sides at once; 2nd. The back suction leg H H fastened to a perpendicular fan case and also to the frame of machine, in combination with a combined separator and scourer, also in combination with a horizontal scouring cylinder; 3rd. The manner of constructing the shoe C C, the way to oat sieves N N and return boards P P, all as arranged in shoe, the carrier boards O O wh ch convey the wheat to the cockle sieves, the manner of secting the cockle sieves at reverse angles to what the out sieves stand; 4th. The manner of constructing the scouring cylinder D D of staves or sections, these staves are cast with teeth on them, also have a rib bolted to them in a spiral form; these staves fit in recess in the heads, also use of beaters in combination with an adjustable brush, J is the compressing links for the purpose of setting the brushes to the scouring case or from it, this is done by a bolt at the end of the scouring cylinder; 5th. The wire cloth scouring case E E, the manner in which it is constructed of a flat warp and a round filling, the fillings are not crimpt as the wire cloth is usually made in combination with a horizontal scourer; 6th. The manner of passing current of air underneath the scouring case E and between the outer case to the suction leg I independent of the scouring of the wheat; 7th. The suction leg I standing in a perpendicular position and fastened to a perpendicular fan case so arranged that the wheat is thrown directly from the scouring cylinder into the bottom of the suction leg I; 8th. The manner of setting the suction leg I so that it joins one end of the scouring cylinder D and forms a suction directly under and all aroundthe outside of the scouring case for the purpose of suction, the fuss and dirt after being scoured off the wheat; 9th. The manner of constructing the double crank or eccentric motion for driving the shoe, in combination with a combined separator and scourer.

No. 7795. Improvements in Fire-proof Safes.

(Perfectionnements aux coffres-forts.)

Thomas Fuller, Montreal, Que., 22nd August, 1877, for 5 years.

Claim.—The space between the outer and inner walls filled in, either wholly or partially, with blast furnace slag or any prepartion thereof.

No. 7796. Stone Sawing Machine.

(Machine à scier la pierre.)

William C. Hoffman, Toledo, Ohio, U.S., 22nd August, 1877, for 5 years.

Claim.—1st. In combination with the saws O the bars P P, each provided with a vertical and a horizontal groove p p^1 respectively and a slot p^{11} at one end of said groove p^1, the blocks Q inserted within said groove p between and upon each side of said saws and the tightening wedge q fitted into said slot; 2nd. In combination with the rails L of the saw frame provided each upon its lower side with a V-shaped bar l^1, the blocks D arranged to slide vertically within the opening e within the main frame and having upon its inner face a journalled roller K that has a V-shaped peripheral groove and the lug d^{111} which projects over said rail; 3rd. In combination with the saw frame the vertically moving blocks D having the horizontal space d^{11}, the nut E fitted into said space, the vertical screws G, the shafts H and I and the mitre gears h h^1 g i^1 i; 4th. In combination with the raising and lowering mechanism described, the gear wheels R S^1, the pinion S and V, the bar T provided with the stud t, the stud U, the cone pulley V_1, the bar w having the hooked projection w and the pin or stud w_1 secured within and projecting from the main frame; 5th. In combination with the raising and lowering mechanism, the pulleys X journalled upon the shaft H, and the clutch Y secured upon said shaft between said pulleys: 6th. The machine constructed and arranged to operate in the manner shown.

No. 7797 Improvements in Dough Troughs.

(Perfectionnements aux huches à pétrir.)

John W. Martin and George Burgert, Alliance, Ohio, U.S., 22nd August, 1877, for 5 years.

Claim.—1st. The combination of the exterior and interior vessel; 2nd. The supports or ribs D on either exterior or interior vessel for the purpose of firmly supporting interior vessel, thus making one solid vessel; 3rd. The space between the vessel with opening for admitting water, and two or more small holes or vents in flange for escape of steam and draining.

No. 7798. Metal Can Seaming Machine.

(Machine à faire les coutures des boîtes métalliques.)

Francis R. Walsh and Francis A. Bowen, Chicago, Ill., U.S., 22nd August, 1877, for 5 years.

Claim.—1st. The combination with the lever K of the disc K_1 carrying the seaming rollers L M N; 2nd. The combination with the disc K carrying the seaming rollers L M N and provided with the notches h i j, of the pawl o and spring m. for adjusting and holding the disc; 3rd. The combination with the lever S carrying the roller r, of the spring catch n; 4th. The combination with the disc k^1 carrying the rollers L M N, of the lever S carrying the roller r.

No. 7799. Improvements in Window Ventilators. *(Perfectionnements aux ventilateurs de croisées.)*

Chris Clushman and Charles Porter, Hamilton, Ont., 22nd August, 1877, for 5 years.

Claim.—The pane of glass A having circular or other shaped holes B B with an adjustable glass cover C to correspond, and pivoted to the said pane of glass by pin E secured by nuts D D.

No. 7800. Improvements on Milk Coolers.

(Perfectionnements aux rafraîchissoirs à lait.)

Orrin J. Stickles, Canton, N.Y., U.S., 22nd August, 1877, for 5 years.

Claim.—The combination of the concentric pans A B, the latter having a central bottomless chamber F to contain ice.

No. 7801. Improvements on Cattle Stanchions. *(Perfectionnements aux étaies à bétail.)*

Zalmon W. Smith, Addison, N.Y., U.S., 30th August, 1877, for 5 years.

Claim.—1st. The lower stanchion pivot *a* provided with semi-peripheral groove and having a locking device; 2nd. The combination with pivoted sections C C_1 of the weighted link *d* working in slot d_1, the latch *f* sliding in the inclined slot f_1 and the stop pin f_2.