

elongated links, having the interstices between the links filled with rubber and its outer surface covered with the same, substantially as described. 4th. Flexible hose composed of a tubular metallic body formed of interwoven elongated links, having the interstices filled with rubber, and provided with a canvas lining and covering, substantially as described.

No. 31,716. Hose or Tubing. (*Boyau ou tuyau.*)

Thomas Midgley and James E. Emerson, Beaver Falls, Penn., U.S., 9th July, 1889; 5 years.

Claim.—1st. Hose or tubing composed of a body formed of intertwined sections of coiled wire having the helices expanded into links running in the direction of the circumference of the tube, and provided with a longitudinal re-enforcement, the links and the re-enforcement being embedded in and covered with rubber or equivalent material. 2nd. Hose or tubing composed of a body formed of intertwined sections of coiled wire, having the helices expanded into links and provided with a longitudinal re-enforcement within or between the links, the whole embedded in and covered with rubber or its equivalent material, substantially as described.

No. 31,717. Method of Manufacturing Belting. (*Mode de fabrication des courroies.*)

Thomas Midgley and James E. Emerson, Beaver Falls, Penn., U.S., 9th July, 1889; 5 years.

Claim.—1st. The method of manufacturing wire belting herein described, which consists in forming a sheet or body by intertwining sections of coiled wire, then heating the sheet or body so formed, and elongating, flattening and heating the helices by subjecting said body to longitudinal tension only while heated. 2nd. The method of manufacturing wire belting herein described, which consists in forming a sheet or body by intertwining sections of coiled wire, then wrapping the body diagonally around a mandrel, and securing the adjacent edges by a separate section of coiled wire, then heating the tube so formed and elongating the helices by subjecting the tube to longitudinal tension while heated, then flattening the tube, and finally covering it with rubber.

No. 31,718. Grain Scourer and Cleaner.

(*Cylindre émotteur.*)

Arthur Moore, Toronto, Ont., 16th July, 1889; 5 years.

Claim.—1st. A vertical conveyor revolving within a perforated cylinder, in combination with a chamber surrounding said cylinder, an air leg communicating with the said chamber at its upper end, and with the cylinder at its lower end, and passage ways designed to spout the grain into the bottom of the conveyor, and to discharge it out of the top of the cylinder, substantially as and for the purpose specified. 2nd. A conveyor revolving within a perforated cylinder, and having its outer edge formed into a series of fingers, each finger being curved or bent so that one edge shall project slightly above the edge of the finger next to it, in combination with a chamber surrounding said cylinder, an air leg communicating with the said chamber at its upper end, and with the cylinder at its lower end, and passage ways designed to spout the grain into one end of the conveyor, and to discharge it out of the other end, substantially as and for the purpose specified. 3rd. A vertical conveyor revolving within a perforated cylinder, and having its outer edge formed into a series of fingers each finger being curved or bent so that one edge shall project slightly above the edge of the finger next to it, in combination with a chamber surrounding said cylinder, an air leg communicating with the said chamber at its upper end, and with the cylinder at its lower end, and passage ways designed to spout the grain into the bottom of the conveyor, and to discharge it out of the top of the conveyor, and with a suction fan located above the conveyor, substantially as and for the purpose specified. 5th. A vertical conveyor revolving within a perforated cylinder contained within a chamber, a revolving suction fan contained within the said chamber in which it is designed to produce an upward draft, and an outward blast through the sides of the said chamber, in combination with passage ways designed to spout the grain into the bottom of the conveyor, and to discharge it out of the top of the conveyor, and adjustable valves for regulating the passage into and from said chamber, substantially as and for the purpose specified. 6th. A hollow shaft, a vertical conveyor carried by said shaft revolving within a perforated cylinder contained within a chamber, the edges of the said conveyor being formed into a series of fingers, each finger being curved or bent so that one edge shall project slightly above the edge of the finger next to it, a revolving suction fan contained within the said chamber in which it is designed to produce an upward draft, and an outward blast through the sides of the said chamber, in combination with passageways designed to spout the grain into the bottom of the conveyor and discharge it out of the top of the conveyor, substantially as and for the purpose specified. 7th. A vertical conveyor revolving within a perforated cylinder contained within a chamber, a revolving suction fan contained within the said chamber in which it is designed to produce an upward draft, and an outward blast through the sides of the said chamber into the chamber H communicating with the chamber K, connected to the chamber containing the conveyor at or near its bottom end, shelves projecting over the openings between the chamber H, and chamber K being provided, in combination with passageways designed to spout the grain into the bottom of the conveyor, and to discharge it out of the top of the conveyor, substantially as and for the purpose specified. 8th. A vertical conveyor revolving within a perforated cylinder

contained within a chamber, a revolving suction fan contained within said chamber in which it is designed to produce an upward draft, and an outward blast through the sides of the said chamber into the chamber H, communicating with the chamber K, connected to the chamber containing the conveyor, at or near its bottom end, shelves projecting over the openings between the chamber H, and chamber K, being provided in combination with said chambers H and K, the air-leg L connected at its upper end with the chamber containing the suction fan, and at its bottom end with the interior of the perforated cylinder at or near the bottom end of the revolving conveyor, a grain spout being connected to the said air-leg near its bottom, and a discharge spout communicating with the interior of the perforated cylinder at the top of the conveyor, substantially as and for the purpose specified. 9th. A vertical conveyor revolving within a perforated cylinder having a series of brushes arranged in it, said perforated cylinder being contained within a chamber, a revolving suction fan contained within the said chamber in which it is designed to produce an upward draft, and an outward blast through the sides of the said chamber into the said chamber H, arranged to communicate with the chamber K connected to the chamber containing the conveyor at or near its bottom end, in combination with the air-leg L connected at its upper end with the chamber containing the suction fan, and at its bottom end with the interior of the perforated cylinder at or near the bottom end of the revolving conveyor, a grain spout being connected to the said air-leg near its bottom and above one or more air-regulating valves, placed on an opening or openings connecting the air-leg with the chamber K, and a discharge spout communicating with the interior of the perforated cylinder at the top of the conveyor, substantially as and for the purpose specified. 11th. A vertical conveyor revolving within a perforated cylinder having a series of brushes arranged in it, said perforated cylinder being contained within a chamber, a revolving suction fan contained within the said chamber in which it is designed to produce an upward draft, and an outward blast through the sides of the said chamber into the chamber H communicating with the chamber K connected to the chamber containing the conveyor at or near its bottom end, in combination with the air-leg L connected at its upper end with the chamber containing the suction fan, and at its bottom end with the interior of the perforated cylinder at or near the bottom end of the revolving conveyor, a grain spout being connected to the said air-leg near its bottom and above one or more air-regulating valves placed on an opening or openings connecting the air-leg with the chamber K, and a discharge spout communicating with the interior of the perforated cylinder at the top of the conveyor, and with the interior of the chamber containing the suction fan, regulating air valve or valves being placed on an opening or openings made between the discharge spout and chamber K, below the passageway leading between the said discharge spout and the interior of the perforated cylinder, substantially as and for the purpose specified.

No. 31,720. Telephone Exchange Signalling. (*Signal d'échange de téléphone*)

Theodore N. Vail, Boston, Mass., and John A. Seely, New York, N. Y., U.S., 16th July, 1889; 5 years.

Claim.—1st. The combination of a central station and a substation united by an electrical conductor at the central station, a circuit changing device consisting of a switch plug normally forming part of said circuit at the substation, a gravity switch, a telephone branch, a bell branch, a generator of electricity and a switch for including said generator in the main circuit consisting of a pivoted arm operating a line contact, and a contact connected to said generator, whereby a change in the normal position of said switch at the substation, and of said apparatus at the central station produces a signal irrespective of the position of the gravity switch, substantially as described. 2nd. The combination of a central station and a substation, an electrical conductor uniting said stations, telephone instruments in said circuit at both stations, a flexible conductor at the central station normally resting upon a section of conductor to complete said circuit, a generator of electricity at the substation, and a switch for including said generator in the circuit, all arranged substantially as described, whereby a change in the normal position of the flexible cord sounds a signal at the substation. 3rd. The combination of two telephone stations, an electrical conductor uniting said stations, a fragment of said conductor containing an electromagnetic indicating instrument at each station, a device at one station, say the first, for connecting and disconnecting said fragment with respect to the main circuit, a generator of electricity and a device for connecting and disconnecting said generator with respect to said conductor at the second station, all arranged and operating substantially as described, whereby a variation in connection of the line fragment at the first station changes the circuit of the generator and sounds a signal at the second station.

No. 31,721. Packing Holder. (*Arrête-garniture.*)

Charles Jenkins, Boston, Mass., U.S., 16th July, 1889; 5 years.

Claim.—1st. The packing holder having a packing holding recess and a screw stud, and the packing disc to fit said recess having the hole or cavity *c*, two sides *e* of which are parallel, a nut *D* to fit said screw stud having a section *d* to fit the recess *c* of the packing, the shoulder *d*, and the section *d*, substantially as described. 2nd. The