

with the foot lever, arranged and operated as shown and described. 10th. In a harvesting machine, the cover or shield fixedly attached to the bracket, in combination with the inner shoe of a cutting apparatus, said shield extending over and downward to protect the front end of said shoe when the machine is in operation, said shield projecting over and below the point of said shoe and not interfering at all with the movement of the shoe, but leaving the cutting apparatus free to follow the undulations of the ground or to be folded independent of the said shield, substantially as shown and described.

### No. 32,983. Grain Harvesting and Binding Machine. (*Moissonneuse-lieuse à grain.*)

The William N. Whitley Company, (assignee of William N. Whitley), Springfield, Ohio, U.S., 2nd December, 1889; 5 years.

**Claim.**—1st. A harvester having an upper and lower elevator belt, in combination with the grain guide in rear of the elevator belts, said elevator belts being operated by a chain exposed to assist the elevating apparatus in carrying the grain in its upward flow to the binder, substantially as described. 2nd. A harvester wherein the driver's seat and upper elevator belt are firmly attached to the seat support, in combination with a post connected to the lower rear side of the main frame of the machine, thereby leaving a sufficiently open unobstructed space to admit of the free passage of long grain, etc., substantially as shown and described. 3rd. In a grain harvesting machine wherein the elevators are driven by an endless chain, in combination with a single post located within the pathway of said chain, its lower end attached to the rear side of the main frame of said harvester, its upper end to the rear of the driver's seat support, substantially as described. 4th. The main frame of a harvesting machine, and the finger beam of its cutting apparatus, in combination with a bracket which connects the two main frame pieces together at the forward part of the machine, the finger beam being connected to said bracket at a point lower than the main frame, substantially as shown and described. 5th. In a grain harvesting machine wherein the main shoe of the cutting apparatus is supported in front of the finger beam and above the knife heel, in combination with a brace fixedly connected to the finger beam, and extended over and in front of the knife and rigidly connected to the main shoe, thereby firmly attaching said shoe to the finger beam, substantially as described. 6th. In a grain harvesting machine wherein the finger beam and platform are rigidly connected together, in combination with means to support the said platform which is attached to the upper edge of said finger beam, and to the rear portion of the platform, said means of support being located inside the carrying belt, and between the elevator rollers, thus forming a brace and tie which more firmly connect the platform and finger beam together, substantially as described. 7th. In a grain harvesting machine wherein the rear end of the fly wheel shaft is supported outside of its pinion, in combination with a support connected to a portion of the main frame, or some fixed part thereof, thereby preventing the crowding of the pinion from its driving gear, and better resisting the pull of the chain which runs the elevators, substantially as described. 8th. A grain harvesting machine wherein the master wheel pinion is located on a shaft in rear of said master wheel, and upon the two side rails of the frame, in combination with oscillating boxes, thereby relieving said shaft from the torsion and twist of the frame, substantially as shown and described. 9th. In a grain harvesting machine, wherein the elevator is made open, giving permanent support to the front of said elevating mechanism, by means of a brace extending from the rear portion of the frame to the front post supporting the elevator, in combination with the reel post connected to the shoe of the finger beam, said two posts being connected and braced so as to form a lateral support truss-shaped for the front of the elevating apparatus also braced endwise to the rear of the main frame of the machine, substantially as shown and described. 10th. In a grain harvesting machine, the combination of the divider and finger beam, with a combined fender and brace fitted over the point of the outer guard, its rear end fixedly attached to the finger beam, and extending outward laterally, thus forming a protection for the knife during its stroke, also extending forward and upward and rigidly attached to the divider, thereby giving it strength and acting to separate the cut from the uncut grain, substantially as shown and described. 11th. A harvesting machine having a double belt elevator open at its rear end, in combination with an inverted V-shaped frame connected to the rear of the main frame, or some fixed part thereof, and a brace extending from upper end of inverted V-frame to the outer rear corner of the lower elevator being a part of the inverted V-shaped frame, all of which firmly support the rear elevating mechanism, substantially as shown and described. 12th. A grain harvesting machine having an open end double elevator wherein the upper belt is narrower than the lower one, in combination with the rear support of the upper belt which is sustained in its proper position through the medium of the driver's seat support, substantially as shown and described. 13th. A grain harvesting machine wherein the height of the cut on the grain wheel side is changed by means of a crank axle plate and screw connected therewith, and pivoted to the rear end of the divider sill or platform, and the height of the master wheel axle is changed by means of the cranked ends of said axle being pivoted to the main frame on each side thereof, in combination with a screw rod fixedly connected to the main frame, its outer end formed to fit a crank, thereby providing means to raise or lower either end of the cutters independently, substantially as shown and described. 14th. A grain binding harvesting machine, in combination with a tubular piece attached to the main frame or some fixed portion thereof, said piece supporting a portion of the elevator and binder shifting mechanism, substantially as shown and described. 15th. In a grain binding harvesting machine, a support for the binding machine attached to the front outer corner of the main frame of the harvester, in combination with a brace rod extending across the front of the machine to the elevator frame, or some fixed portion thereof, thereby forming a truss to securely carry the weight of the binding attachment but does not interfere with its backward and forward movement, sub-

stantially as described. 16th. A grain binder and harvesting machine wherein the binder is movable backwards and forwards, in combination with a crank, a pair of bevel gears, and a spur pinion which acts with the rack to move the binder either backward or forward, and so constructed and arranged as to operate jointly, substantially as shown and described. 17th. A grain binder and harvesting machine having a reel, butter, relief, rake and elevator chain, in combination with the two shafts attached to the front end of the machine, one of which receives its motion from the upper roller shaft of the lower elevator which also communicates motion to the upper elevator also to the butter and to the horizontal shaft, which in turn communicates motion to the reel and relief rake, substantially as and for the purposes shown and described. 18th. A harvesting machine having an open end double canvas elevator, wherein the binding machine is driven direct by the endless driving chain, which derives motion from the driving sprocket wheel located on the fly wheel shaft, which is supported on the main frame of the harvester, said chain running around the curved support of the driver's seat, board, in combination with the horizontal carrying and elevator belts, the carrying and lower elevator belts being driven direct by the chain, the upper elevator belt is driven through the medium of gears arranged at the front end of the machine, the chain driving the sprocket wheel operating the binding machine, substantially in the manner and for the purposes shown and described. 19th. A harvesting machine wherein the underside of the upper end of the lower elevator frame is braced and held the proper distance apart by means of a rod or tubular piece, in combination with a binding machine which is supported at its upper end by said rod, said binding machine is loosely attached to said rod to permit it to freely slide along in its forward and aft movement, substantially as shown and described. 20th. In a grain harvesting machine having an open end elevator, the combination of the binder shifting mechanism located at the rear upper corner of the machine within reach of the driver and below the pathway of the grain as it is elevated into the binder receptacle, substantially as shown and described. 21st. A grain harvesting machine, in combination with a grain binder and grain deflector which connects the front and rear upper ends of the upper elevator together, the deflector acting in a double capacity holds the upper end of the belt guides of the elevator at the proper distance apart, and at the same time it guides and directs the grain into the binder receptacle, substantially as shown and described. 22nd. A grain binding machine having a hinged grain separator attached to the binding mechanism, and hanging down loosely while the gavel is being bound, in combination with a rotary ejector attached to the knoter shaft or knoter wheel, the point of which when it rotates, coming in contact with the swinging grain separator, thereby pressing the unbound grain back in the binder receptacle, and clearing the pathway of the ejector, as it rotates, to eject the bound gavel, thereby positively preventing its entanglement with the unbound grain, substantially as shown and described.

### No. 32,984. Air Brake. (*Frein atmosphérique.*)

The Lansberg Brake Company (assignee of Frank Lansberg), St. Louis, Mo., U.S., 2nd December, 1889; 5 years.

**Claim.**—In an air-brake, the combination, with the train pipe and receiver 3, of independent cylinders provided with pistons having rods located at each end of said receiver, the pipe 4 provided with valves connected to pipe 1 and receiver 3, the pipes 10, each having a valve 12 connected with pipe 4 and each of the cylinders and the pipes 11, each having a valve 13 communicating with pipe 1 and each of the cylinders, whereby said cylinders may be supplied from the receiver, or from both the receiver and train pipe, or from the train pipe alone, or either cylinder may be supplied from the train pipe independently of the other cylinder and receiver, as set forth.

### No. 32,985. Apparatus for Smoking Meats.

(*Appareil à fumer les viandes.*)

Isaac C. Copeland, Boston (assignee of Benjamin J. Downs, West Somerville), Mass., U.S., 2nd December, 1889; 5 years.

**Claim.**—1st. In an apparatus for smoking meats, the furnace or heater E having smoke pipe I and damper J therein, in combination with the perforated section L for emitting smoke within the chamber, and the sleeve or slide M for controlling the same, and with the external operating means, substantially as and for the purpose set forth. 2nd. In an apparatus for smoking meats, the combination, with the chamber and the smoke-emitting furnace therein, of a movable device for support of a sample of meat under treatment, such device being adapted to expose the meat sample and to close the aperture through the wall, substantially as and for the purpose set forth.

### No. 32,986. Pressure Regulating Valve and Governor. (*Soupape et gouverneur pour régler la pression.*)

John M. Foster, New York, N.Y., U.S., 2nd December, 1889; 5 years.

**Claim.**—1st. The combination of a regulating valve and casing carrying a diaphragm open to the fluid pressure, with a valve spindle passing through and adjustable in the diaphragm, and a spiral spring around the valve stem which has an operating handle outside the diaphragm, all substantially as described. 2nd. The combination of a regulating valve and casing carrying a diaphragm open to the fluid pressure, with a threaded stuffing box connected to the diaphragm, a spiral spring around the valve stem to oppose the fluid pressure, and a threaded valve stem passing through the stuffing box and having an operating handle. 3rd. The combination of a regulating valve and a casing carrying a diaphragm open to the fluid pressure, with a threaded stuffing box connected to the diaphragm, a threaded valve stem adapted to the said stuffing box, and a spiral spring around the valve stem to oppose the pressure on the diaphragm. 4th. The combination of a regulating valve and casing carrying a diaphragm open to the fluid pressure, with a threaded valve stem passing through