

shaft or its bearings and form a hinge connection for said cutting apparatus concentric with said crank shaft, to permit said cutting apparatus to be operated either in a horizontal or vertical position, said inner shoe being extended forwardly and upwardly from said crank and provided at its inner edge with an upturned portion which extends forwardly and upwardly from said crank to form an inclined guard or shield therefor, in any angular position of said cutting apparatus about its hinged connection, substantially as specified. 7th. In a mowing machine, a main frame and a cutting apparatus, a revolving crank and shaft supported in a suitable tube or bearing on the main frame, adapted to transmit motion to the cutting knife by a pitman connection from said crank, an inner shoe on said cutting apparatus having bearings which surround the crank shaft box, to form a hinged connection with the frame, said shoe being extended forwardly and upwardly to form a shield for said crank and pitman, and a carrying wheel arranged on the front of the projecting portion of said shoe, said wheel being located on the outer portion of the shoe, so that when the cutting apparatus is turned to an angular position the wheel will be protected by the formation of the shoe, substantially as specified. 8th. In a mowing machine, a vibrating frame and a cutting apparatus hinged thereto concentrically with the shaft which transmits motion to said cutting apparatus, a lifting lever and its stand arranged on the forward corner of the vibrating frame, an inner shoe having encircling bearings to form the hinged connection of said cutting apparatus, which bearings are arranged in the front and rear of the lifting lever stand, a connection from said lifting lever to said shoe, and a spring operating against said lifting lever, substantially as and for the purpose specified. 9th. In a mowing machine, a vibrating frame and a cutting apparatus hinged thereto, a lifting lever and its stand on said frame, and a connection from said lifting lever to said cutting apparatus, a connecting rod from said lifting lever extending through a spring supported in a loop connection on said frame, and a link connection from said frame having a perforated bearing for said connecting rod and adapted to limit the movement of said spring on said connecting rod, substantially as specified. 10th. In a mowing machine, a vibrating frame and a cutting apparatus hinged thereto, a lifting lever and its stand on said frame, and a hinged connection from said lever to said cutting apparatus, a connecting rod attached at one end to said lever and provided with a head or shoulder to bear against a spring located on said bar, a loop on the main frame to support said spring, and a pivoted link connection on said frame provided with a perforated bearing seat to contact with the opposite end of said spring, said connecting bar being adapted to pass through said perforated bearing seat, substantially as specified. 11th. In a mowing machine, a vibrating frame supported by two main driving wheels, a tongue hinged thereto, a cutting apparatus hinged to said frame, the combined hand and foot levers mounted upon the hinged tongue and adapted to operate independently upon the forward part of the vibrating frame, one of said levers being adapted to adjust and hold the cutting apparatus to varying heights while the other is adapted to act independently thereof in raising the cutting apparatus, substantially as specified. 12th. In a mowing machine, a vibrating frame and a tongue hinged thereto, whiffletrees connected to said tongue, and a draft connection from the whiffletrees to the forward end of the vibrating frame, said whiffletrees and the draft connection being suspended from said tongue by a pivoted clevis device, substantially as specified. 13th. In a mowing machine, a vibrating frame and a tongue hinged thereto, a draft connection suspended from said tongue by a support consisting of a bifurcated connecting piece, a link from said connecting piece to said frame, and a U-shaped clevis pivoted to said tongue and to said connecting piece, substantially as specified. 14th. The combination with the main frame, the pivoted tongue and the whiffletrees, of a draft connection consisting essentially of a pivoted U-shaped piece h , the pivoted link connection h^2 , having the eye h^3 , and pivotally supported in said U-shaped supporting piece, substantially as specified.

No. 42,562. Refrigerator. (Refrigerant)

Alexander T. Ballantine, Cleveland, Ohio, U.S.A., 11th April, 1893; 6 years.

Claim.—1st. A refrigerating apparatus comprising a refrigerating coil, a condenser, a refrigerant receptacle, and connecting pipes, combined with a compressing pump having cylinders and reciprocating pistons therein, by which the spent gas is taken from the coil, compressed and forced through the condenser and refrigerant receptacle, back to the coil, an oscillating arm with which the pistons are connected, and by which they are operated, a rock shaft on which the oscillating arm is secured, a hydraulic motor connected with the rock shaft, a reciprocating valve for such motor, and adjustable connections between the said valve and the rock shaft, by which the throw of the pump pistons may be regulated, so as to insure a complete stroke of each in order to expel all of the compressed gas, substantially as described. 2nd. In a refrigerator, a motor and a pump, in combination with a condensing chamber, a refrigerant receptacle and a condensing coil located in said chamber a refrigerating pipe arranged to discharge by gravity toward the pump, a feed pipe extending from the refrigerant receptacle to said refrigerating pipe, and a valve to admit the refrigerant located on a plane above the bottom of the pump, substantially as described. 3rd. In a refrigerator, a reciprocating pump to exhaust the refrigerating coil and condense the refrigerant, a condensing chamber, and a refrigerant receptacle therein, and a condensing coil discharg-

ing by gravity into the top of said receptacle, a refrigerating pipe arranged to discharge by gravity into the bottom of the said pump, a feed pipe from the refrigerant receptacle connected with the refrigerating pipe, and a controlling valve at the point of union between said pipes, substantially as described. 4th. In a refrigerator, a condensing chamber, and a condensing pipe and a refrigerant receiver exposed to the water in said chamber, in combination with a hydraulic motor, having a discharge passage into said chamber to utilize the waste or exhaust motor fluid for condensing and cooling purposes, substantially as described. 5th. In a refrigerator, a pump having a chamber in its bottom for the accumulation of gas and oil, a refrigerating pipe discharging by gravity into said chamber, and a condensing pipe on the pressure side of the pump, having a gravity discharge, in combination, with a receptacle into which said pipe empties, a condensing chamber enclosing said receptacle and condensing pipe, and a feed pipe with a valve connecting said receiver with the refrigerating pipe, substantially as described. 6th. In a refrigerating apparatus, a feed pipe and a refrigerating pipe, and a coupling uniting said pipes having two separate valves to control the flow of refrigerating agent from one pipe to the other, and a plunged opening in said coupling for supplying the refrigerating agent, substantially as described. 7th. A refrigerating apparatus comprising a refrigerating device, such as a coil of pipe, a refrigerant receptacle from which the refrigerant is forced by accumulated pressure therein into the refrigerating device, a condensing pump having a chamber below its pistons, into which chamber the spent gas from the refrigerating device is discharged, and whence it is taken by the pump and compressed, a condensing and cooling chamber above which the refrigerating device and the pump are arranged, and in which is submerged the refrigerant receptacle, a coiled pipe conveying the compressed gas from the pump through the condensing and cooling chamber into the refrigerant receptacle, and a hydraulic motor whose waste water discharge into the cooling and condensing chamber, substantially as described. 8th. An automatic refrigerating apparatus comprising a refrigerating device, such as a coil of pipe, a refrigerant receptacle from which the refrigerant is forced into the refrigerating device, a condensing pump connected with the refrigerating device and the refrigerant receptacle, a condensing and cooling chamber, and a hydraulic motor adapted to receive its supply of motor fluid from city mains or other source of water, the pressure of which is subject to periodical variation, and having the connections between its valve and piston, and the condensing pump constructed substantially as described to overcome a dead centre, and thereby cause the motor to run upon the restoration of pressure after such pressure has been diminished or cut off, thus automatically running the apparatus, substantially as described.

No. 42,563. Pipe. (Pipe.)

Luke Davis, assignee of Adolf C. Berger, both of Toronto, Ont., Canada, 11th April, 1893; 6 years.

Claim.—1st. In a combination tobacco smoking device, the nicotine bowl fitted in an adapted chamber in the under side of the holder and enclosing the lower end of the piercing point, substantially as shown and described. 2nd. In a combination tobacco smoking device, the tobacco bowl having a central opening in its bottom and packing around the same to fit on the piercing point, substantially as shown and described. 3rd. In a combination tobacco smoking device, the combination of the nicotine bowl fitted in a chamber in the under side of the holder, and the tobacco bowl adapted to fit over the piercing point and packed as specified, substantially as shown and set forth.

No. 42,564. Method of Cooling the Iron in Transformers, etc. (*Méthode de refroidir les transformateurs, etc.*)

Henry A. Rowland, Baltimore, Maryland, U.S.A., 12th April, 1893; 6 years.

Claim.—1st. In electric apparatus of the character described, the combination with sheets of laminated iron subject to varying magnetic influences of vessels containing fluid arranged in juxtaposition to said sheets and parallel to the motion of the lines of force, for the purpose set forth. 2nd. In electric apparatus of the character described, the combination with a plurality of sheets of laminated iron subjected to varying magnetic influences, of vessels containing fluid arranged alternately with said sheets of iron and parallel to the motion of the lines of force, substantially as and for the purposes described. 3rd. In electric apparatus of the character described, the combination with a plurality of sheets of laminated iron subjected to varying magnetic influences, of vessels containing fluid arranged alternately with said sheets of iron and parallel to the motion of the lines of force, and means for keeping a continuous flow of fluid through the said vessels, substantially as and for the purposes described.

No. 42,565. Method of Cooling Transformers, Dynamos, &c. (*Méthode de refroidir les transformateurs, dynamos, etc.*)

Henry A. Rowland, Baltimore, Maryland, U. S. A., 12th April, 1893; 6 years.

Claim.—1st. In electric devices of the character described, the method of cooling the part or parts likely to become heated, which consists in placing in juxtaposition to the said part or parts a volatile