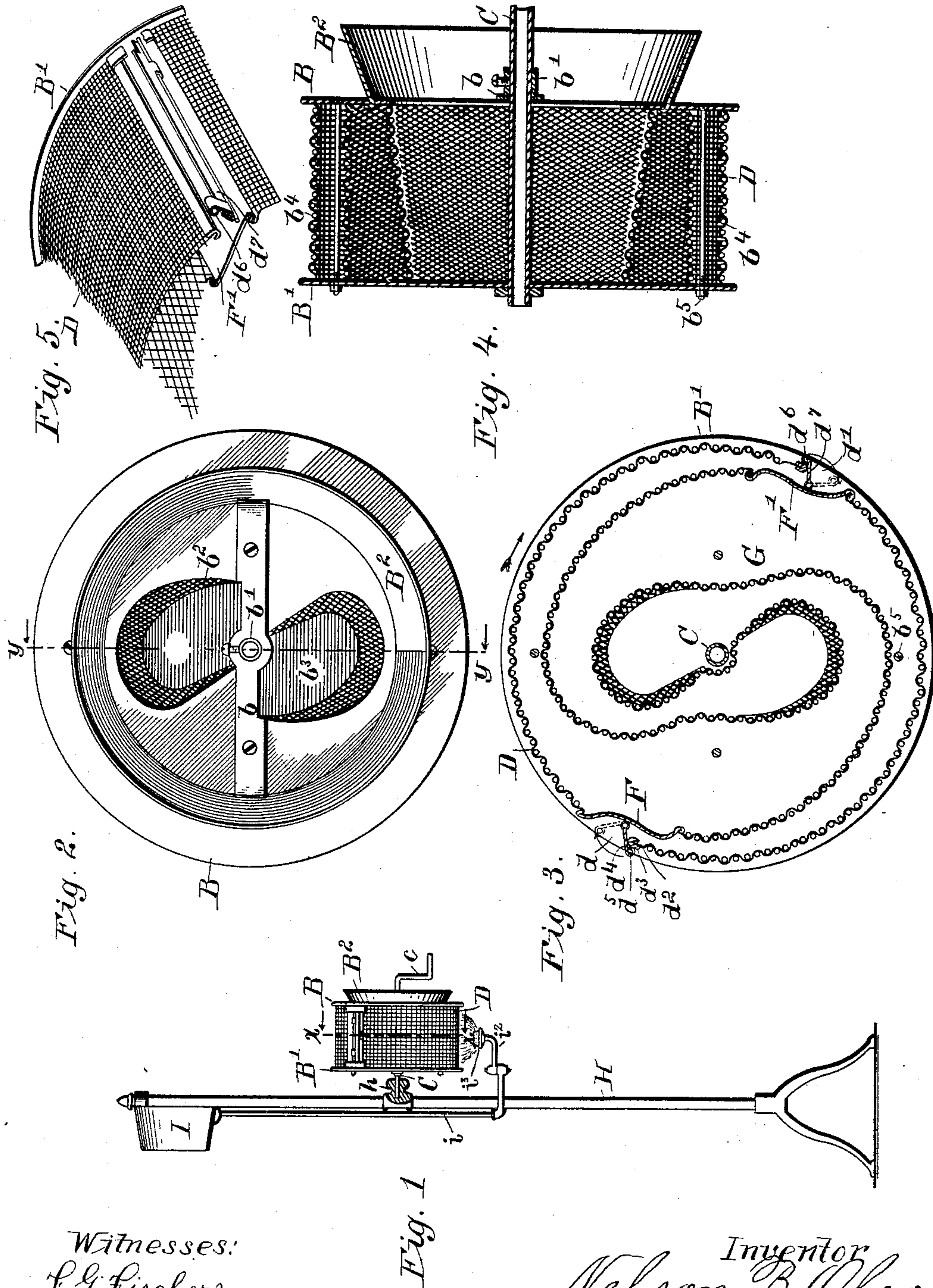


(No Model.)

N. B. OLSON.
CORN POPPING APPARATUS.

No. 480,779.

Patented Aug. 16, 1892.



Witnesses:
S. G. Fischer
S. L. Hasson

Inventor
Nelson B. Olson.
By Richd. H. Manning Atty.

UNITED STATES PATENT OFFICE.

NELSON B. OLSON, OF KANSAS CITY, MISSOURI, ASSIGNOR TO CHARLES O. OLSON, OF SAVONBURG, KANSAS.

CORN-POPPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 480,779, dated August 16, 1892.

Application filed March 4, 1892. Serial No. 423,739. (No model.)

To all whom it may concern:

Be it known that I, NELSON B. OLSON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Corn-Popping Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is, first, to divert the movement of the unpopped corn from the popped and separate one from the other while rotating in the area subjected to parching heat; second, to control the openings for the refuse and unparched corn.

My invention further consists in the novel construction and combination of parts, which will first be fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my improved corn-popping apparatus or case, shown journaled to the side of a vertical support, also showing an oil-tank and the swinging oil-conveying bracket extending from the tank beneath the corn-popping apparatus. Fig. 2 is an end view of the apparatus, showing the discharge-openings for the popped corn and also the spiral conveyers on both sides of the central shaft. Fig. 3 is a vertical sectional view of the apparatus, taken upon the line $x x$ on Fig. 1. Fig. 4 is a vertical sectional view of the apparatus, taken upon the line $y y$ of Fig. 2. Fig. 5 is a detail view in perspective, showing a portion of the circular mesh forming the outside and also the spiral conveyer, and also showing the opening between the intercepted ends of the said mesh and the valve closing said opening.

Similar letters of reference indicate corresponding parts in all the figures.

In carrying out my invention I make a case or drum A of the requisite dimensions and preferably circular in form. The ends or heads of the case are composed of circular plates B B', which are of the same diameter.

Upon the outer side of plate B and extending from a point a short distance toward the axis from the periphery of said plate is rigidly attached a circular flange B², which flange extends a short distance outwardly and is in-

clined at an angle to said plate. Between the inner sides of the flange B² and to said plate B in the line of its axis is attached rigidly a flat bar b , through which is made a transverse shaft-opening b' .

At one side of the bar b and through the plate B is made a transverse discharge-opening b^2 . The lines of the opening b^2 extend from the axis of the plate B a short distance toward the inner side of the flange B² in a straight line, and thence in a single curved line to a point on the bars b a short distance from said axial point. Upon the other side of the bar b and through said plate is made a transverse discharge-opening b^3 , which is similar to the opening b^2 , the greatest width of said opening being along the line of the bar b and in an opposite direction to the described width of the opening b^2 . Through the transverse bar b and its opening b' is inserted one end of a shaft C, which shaft is also extended through the axis of the outer plate B', and both plates are secured rigidly to said shaft and arranged therein at the requisite distance apart to give the desired capacity to the interior of the drum.

The periphery D of the drum is composed of a wire-mesh of a certain degree of fineness to retain the unparched or raw corn, which mesh is rigidly attached to the inner sides of the plates B B' near the periphery of said plates and describes the circuit of said periphery.

Through the mesh D, upon one side of the apparatus and extending from the inner side of plate B to the inner side of the plate B', is made a transverse discharge-opening d . Upon the other side of the apparatus, upon a line drawn through the opening d and the shaft C and through the mesh D, is made a transverse opening d' , which is similar to the opening d .

Journaled at each end at d^3 in the sides B B' of the case A, and directly beneath the plate F and, as shown in Fig. 3, opposite the lower edge of the opening d , is a swinging plate or valve d^4 , the upper longitudinal edge of which valve or plate extends to the other side of the opening d in the mesh D, and upon said edge is a catch or hook d^5 .

In the opening d' , and directly opposite the side of said opening which is alternate to the side and portion of the mesh to which the valve d^4 is connected, is hinged a valve d^6 , which is similar to the valve d^4 , and which

valve engages with the other side of the opening d' in the mesh and with the portion of the mesh which makes a portion of the circuit of the apparatus and carries the valve d^4 . To the opposite innerside of the opening d other than that having the hinged valve d^4 is attached rigidly one end of a scattering-plate F, which is of the same width as the mesh D and extends inwardly and directly over the valve d^4 in a double curved line and a short distance beyond said valve, for the purpose hereinafter described. To the other end of the plate F is attached rigidly one end of a coarse mesh or conveyer G. To the opposite inner side of the opening d' from that having the valve d^6 is attached a scattering-plate F', which is similar in width and construction to the plate F and extends over the valve d^7 a distance corresponding to that of the plate F. To the inner end of the plate F' is attached one end of a coarse mesh or conveyer G, which is of the same width as the mesh D and extends in a line nearly concentric with the outer mesh D, forming a convolute and nearly to the opening d' , and thence directly upward to a point in a horizontal line with the shaft C, at which point the side of the mesh upon the inner side of the plate B is made to describe, and is bent around and in line with the curved edge of the transverse opening b^2 , and thence to and over the portion of the outer surface of the shaft C. The portion of the curved mesh upon the end B' is made comparatively smaller than at the opening d^2 , and is inclined outwardly at an angle to said end B'. From shaft C the mesh G is made to describe the lines bounded by the opening d^3 in the plate B, and is inclined in the same manner as the mesh G in the opening d^2 . From the position of the bar b the mesh G is continued in the direction of the periphery of the drum A, and thence between the inclined mesh around the opening b^2 and the exterior wire D and concentric with the inner side of said mesh, and is attached rigidly to the inner end of the scattering-plate F, thus forming oppositely-discharging receptacles for the popped corn.

The plates B B' are bound together by transverse bolts b^4 b^4 , which are attached to the inner side of the plate B and extend through the plate B' and are screw-threaded and fitted with the securing-bolts b^5 . To support said apparatus upon one side of an upright or standard H is attached a journal-box h . The inner end of the shaft C, carrying the drum A and extending from the end B' of the said drum, is journaled to a horizontal position in the box h . Upon the other end of the shaft C is a handle c . Upon the standard H is an oil-reservoir I, to which is attached one end of an oil-conducting pipe i . To the lower end of pipe i is attached a hinged bracket i^2 , upon which is a burner i^3 , which burner is moved to and fro beneath the drum D, as required.

In the operation of my improved apparatus

and in the position as seen in Fig. 3 the raw or unparched corn is placed within the opening b^3 and immediately falls through the mesh G upon the exterior fine mesh D, which is in the flame of the burner. The drum is then slowly moved in rotation and the corn begins to parch or pop, and in a short circuit described by the drum the position of the opening d' and the plate F' is brought to a position directly within the flame of the burner. The unparched corn is thrown upon the plate F', by which it is scattered and thrown over the farther end of said plate and falls through the mesh G upon the exterior fine mesh D within the flame of the burner. The popped corn, which, being light, is moved faster than the unpopped corn, is conveyed by the mesh G within the inclined discharge-loops of the mesh G and the popped corn falls by gravity through the opening b^2 and is conducted by the flange B² to the receptacle therefor. The loops of the mesh permit an accretion of the popped corn to be discharged as rapidly as it is popped and without crowding. The unpopped corn when separated from the popped is scattered over the space described by each one of the plates F F', and consequently the heat is permitted to reach each kernel instead of being retarded in the bulk of the wire. The remaining unpopped corn which refuses to parch is discharged by reversing the movement of the drum, which throws the corn against the valve F and which valve yields and permits the discharge of the corn. The valves F F' also divert the heat which enters the respective openings d d' toward the plates F F' and the scattering of the corn is made with greater rapidity.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. In a rotary corn-popping case having exterior perforated sides and suitable discharge-openings and an interior convoluted perforate conveyer, a scattering-plate uniting said conveyer with the inner sides of said case, substantially as and for the purpose described.

2. In a rotary corn-popping case having exterior perforated sides and transverse discharge-openings in said sides, an interior convoluted perforate conveyer and an intermediate scattering-plate within said case, extending over one of said openings and connected with the inner side of said case and the said conveyer, for the purpose described.

3. In a rotary popping-case having ends and exterior perforated sides and transverse openings in said sides, a scattering-plate extending over one of said openings, a convoluted perforate conveyer connected with said scattering-plate, and a valve in said transverse opening beneath said scattering-plate, for the purpose described.

NELSON B. OLSON.

Witnesses:

H. R. TOMLINSON,
S. L. C. HASSON.