

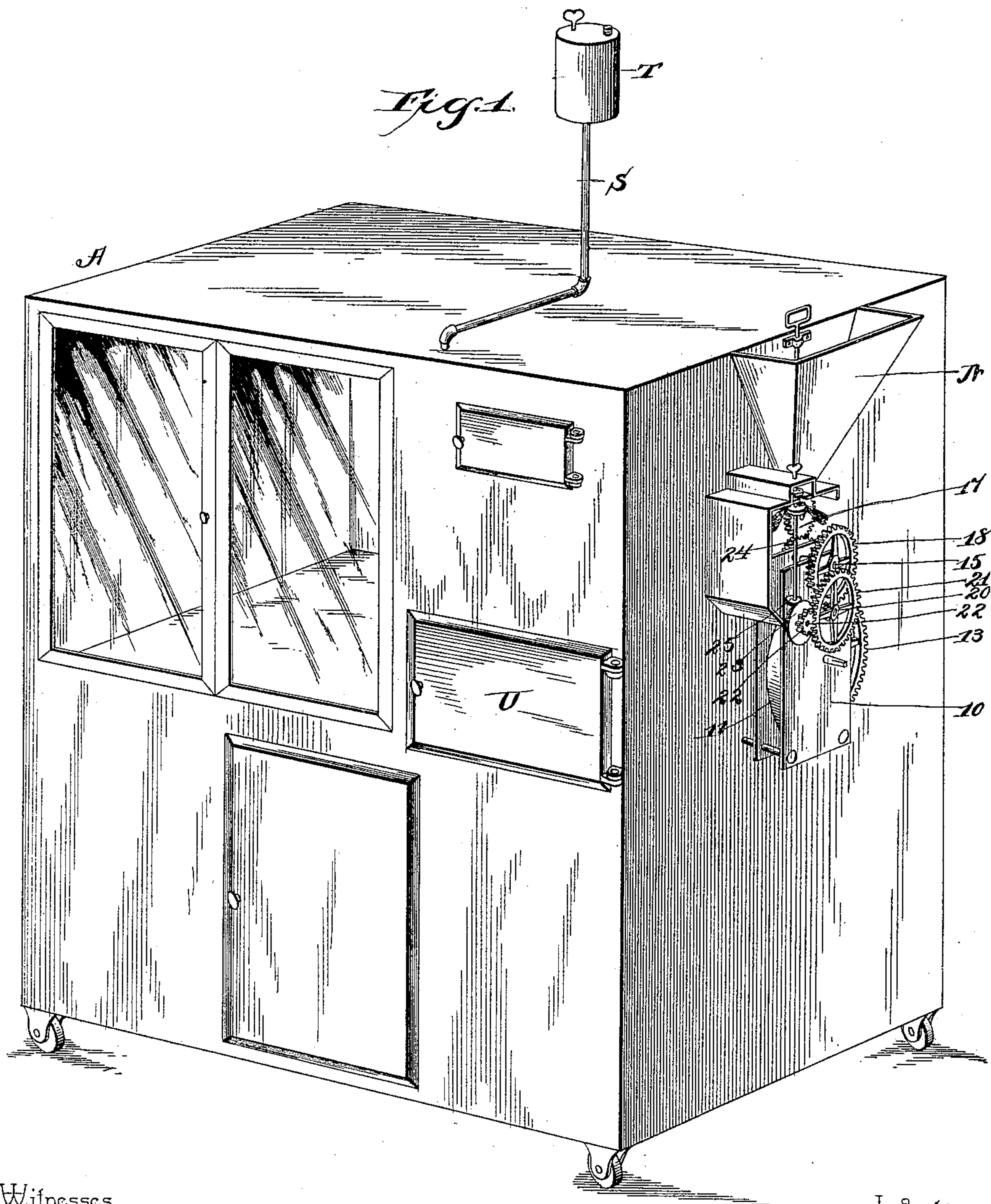
(No Model.)

3 Sheets—Sheet 1.

R. W. HACKER.
CORN POPPING MACHINE.

No. 495,886.

Patented Apr. 18, 1893.



Witnesses

E. H. Hurdman,
W. L. D. J.

Inventor

R. W. Hacker

By *his* Attorneys,

C. A. Snow & Co.

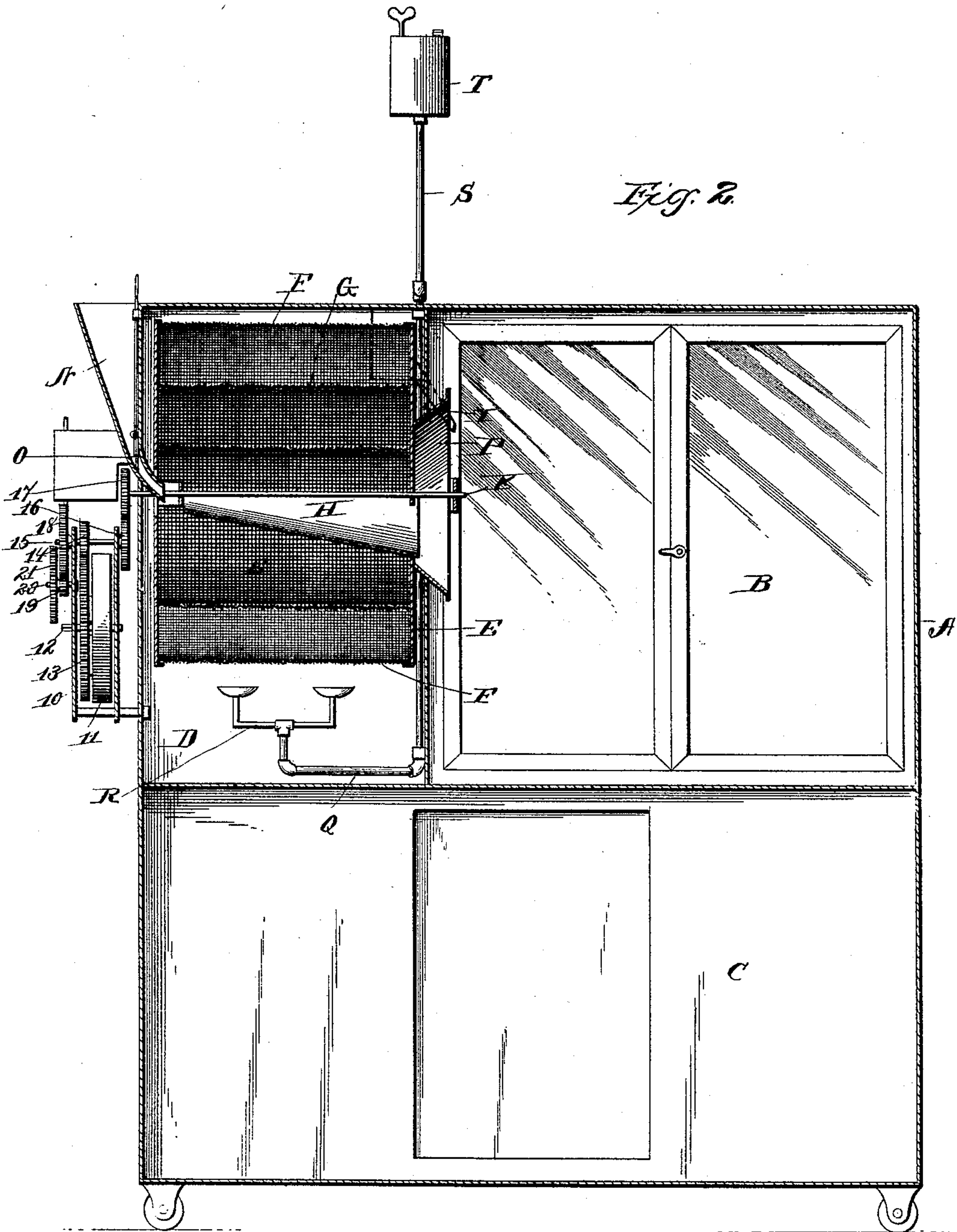
(No Model.)

3 Sheets—Sheet 2.

R. W. HACKER.
CORN POPPING MACHINE.

No. 495,886.

Patented Apr. 18, 1893.



Witnesses

Inventor

E. H. Hurdman,
W. D. Hurdman,

R. W. Hacker
By his Attorneys,

C. A. Snow & Co.

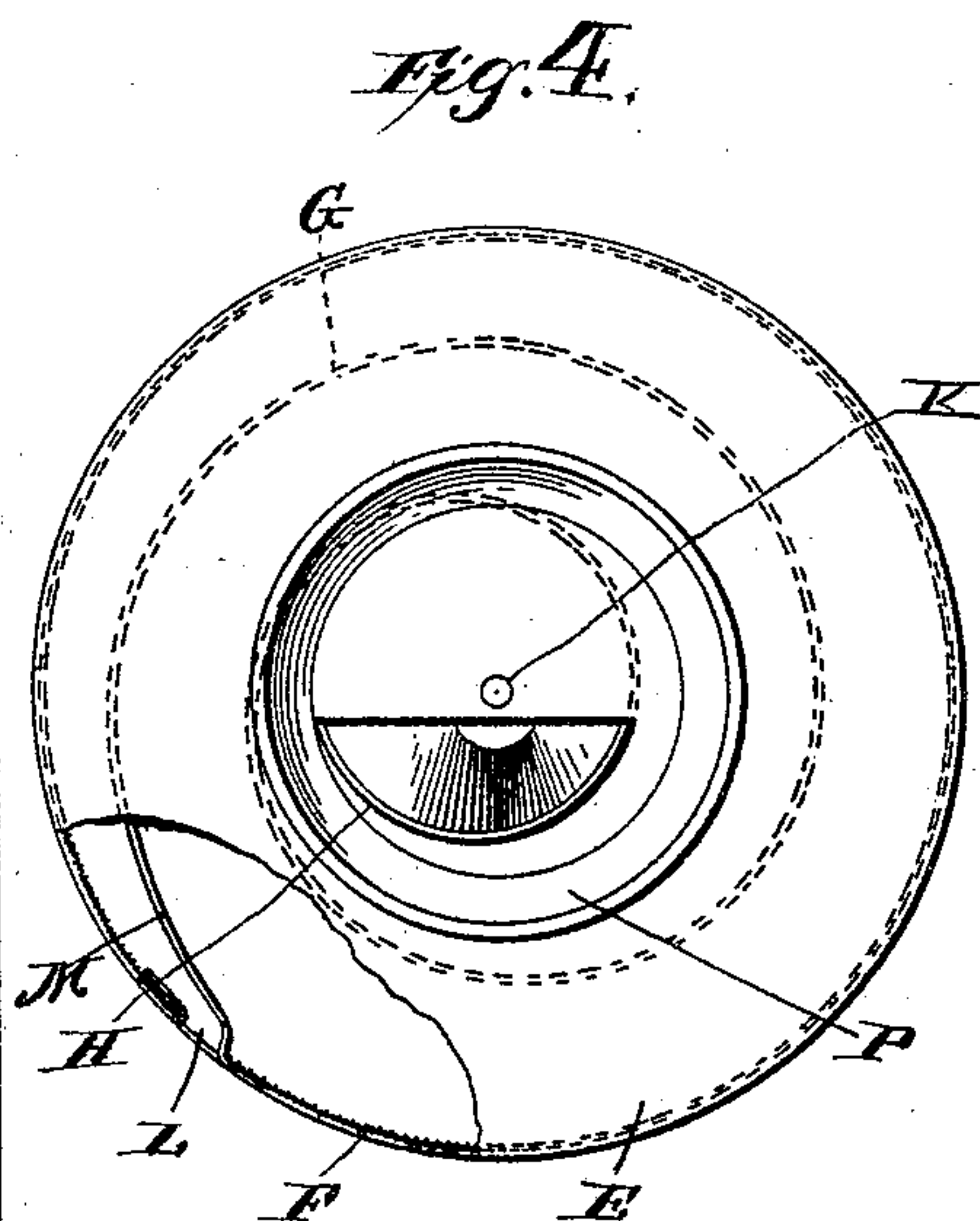
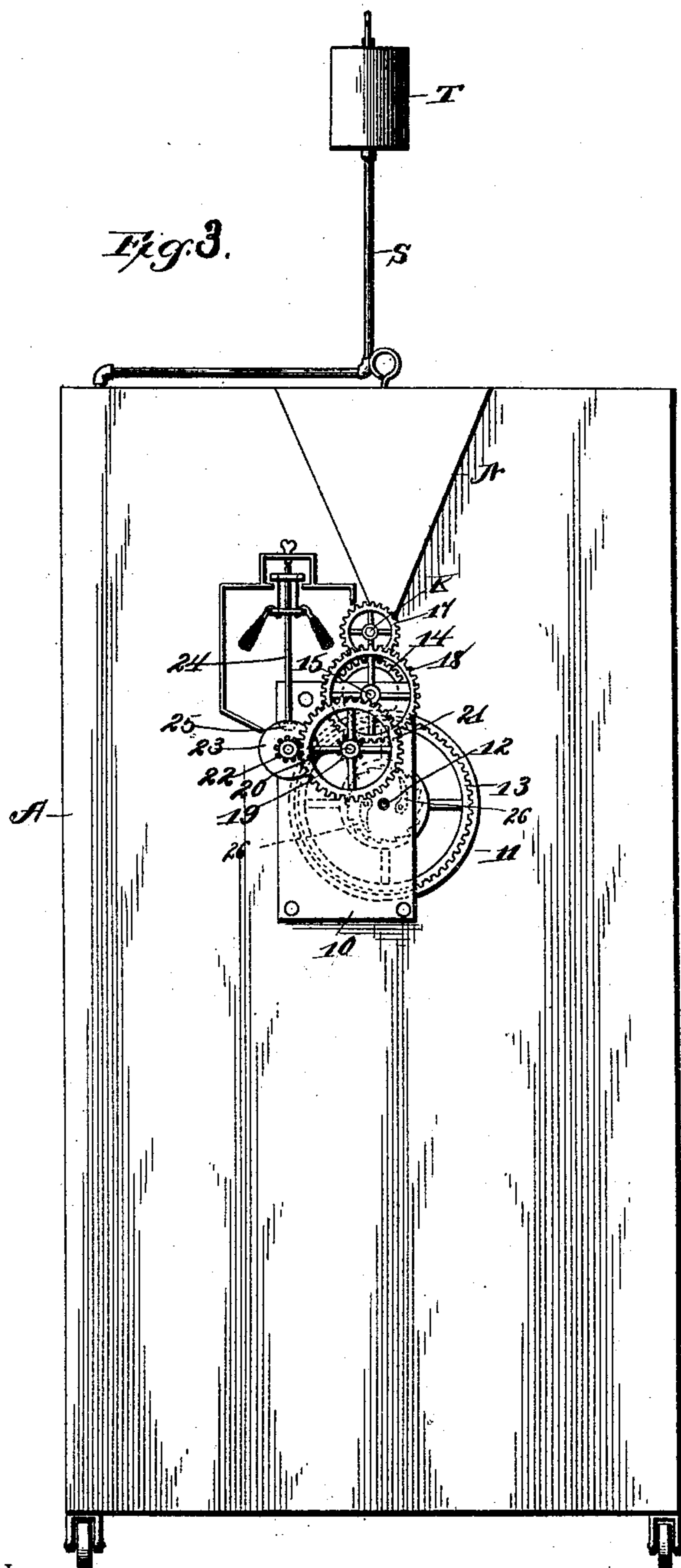
(No Model.)

3 Sheets—Sheet 3.

R. W. HACKER.
CORN POPPING MACHINE.

No. 495,886

Patented Apr. 18, 1893.



Witnesses

Inventor

E. C. Hurdman,
E. D. Duff.

By *his* Attorneys,

R. W. Hacker

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

RICHARD W. HACKER, OF YORK, NEBRASKA.

CORN-POPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 495,886, dated April 18, 1893.

Application filed September 7, 1892. Serial No. 445,228. (No model.)

To all whom it may concern:

Be it known that I, RICHARD W. HACKER, a citizen of the United States, residing at York, in the county of York and State of Nebraska, have invented a new and useful Corn-Popping Machine, of which the following is a specification.

My invention relates to improvements in corn popping machines, the object in view being to provide a simple and effective, cheap and durable device, having compactly arranged operating mechanism, and adapted to separate unpopped corn, dirt, &c., from the popped corn.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings: Figure 1 is a perspective view of a corn popping machine, embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a side view, showing the operating mechanism. Fig 4 is a view of the inner end of the cylinder, from which the popped corn is discharged into the receiver.

A represents the case, having the receiving compartment B, the subjacent cupboard, C, and the popping-chamber, D.

In the popping chamber, above the plane of the floor of the receiving chamber, is arranged the rotary cylinder, E, comprising the outer shell, F, of fine wire cloth, and the inclosed, spirally-disposed elevating and separating large mesh screen web, G, which is connected at one end to the outer shell and at the other end to the discharging chute, H. The said chute H, is a smooth cone-shaped horizontally arranged piece of metal which forms a direct continuation of the web G, and is located at the center of the cylinder and flared into a discharge opening, I, in the end-wall of the latter, in juxtaposition to the supporting shaft, K, which is permanently attached to the cylinder and is journaled in bearings in the sides of the popping compartment. The shell of the cylinder is provided adjacent to the junction therewith of the outer end of the separating web, with a refuse-slot, L, through which unpopped corn may escape, as will be fully described hereinafter.

A guard, M, of sheet metal connects the outer extremity of the separating web to the shell of the cylinder, and bridges the slot, L, whereby the unpopped corn which falls through the separating-web prematurely, or before it has had an opportunity to receive the heat of the subjacent fire, is prevented from escaping through the escape-slot. The cylinder being rotated in the direction indicated by the darts in the several views, it will be seen that the popped corn will be elevated by the spiral web until it reaches the smooth metallic discharge-chute, while the unpopped corn will continue to be separated from the popped corn and will drop, at each revolution through the large meshes of the separating web. By reason of having the conical metallic discharging chute H, arranged at the central terminal of the spiral web G, and having the flared ends thereof disposed in the discharge opening I, the popped corn as soon as it drops into said discharging chute will be rapidly discharged through the discharge opening into the chamber B, inasmuch as the chute H, affords no impediment to the free discharge of the popped corn, and owing to the flaring thereof into the discharge the chute of itself acts in the capacity of a conveyer for the popped corn. Thus the unpopped corn will fall upon the outer shell, and, being elevated by the spiral web, will again fall through repeatedly, until the operation is completed. After all of the corn which can be popped has been discharged through the opening into the receiving chamber, the unpopped corn may be discharged from the cylinder, through the slot in the outer shell, by reversing the rotation of the latter. A hopper, N, attached to the outer side of the popping chamber, or the frame of the machine, communicates at its lower end with the cylinder through an inlet opening, O, in the end wall of the latter, opposite to the discharge opening. Around the discharge opening is arranged an annular, flared guard-flange, P, which projects at its end through a suitable opening in the wall of the receiving-chamber, to prevent the popped corn from falling outside the latter.

Q represents a swinging bracket, bearing a burner, R, which communicates, by means of the feed tube, S, with the fuel reservoir, T, arranged above the case of the machine. This

bracket may be swung outside the case, through the door, U, formed in the front of the latter. When in its operative position this burner is arranged directly beneath the
5 cylinder.

In a suitable frame, 10, arranged upon the outer side of the case of the machine, adjacent to the lower end of the feed-hopper, is arranged the operating mechanism, having the
10 spring-drum, 11, mounted upon an arbor, 12, adapted to receive an operating key, not shown, of any approved form. Permanently secured to said arbor is a gear, 13, which meshes with a pinion, 14, carried by the coun-
15 ter-shaft, 15, which is geared to the main-shaft, above described, and shown at K, by the intermeshing gears, 16 and 17, carried, respectively, by the shafts 15 and K. The counter-shaft also carries a gear, 18, which
20 meshes with a pinion, 19, carried by a stub-shaft, 20, a gear, 21, being secured to said pinion to mesh with a pinion, 22, mounted upon a similar stub-shaft and carrying a bevel-gear, 23.

24 represents a vertical governor-shaft, mounted in bearings in a suitable frame-work and carrying approved governor mechanism, the lower end of the shaft being provided with a bevel pinion, 25, which meshes with the
30 bevel-gear, as described.

The rear side of the main-gear, which is mounted upon the spring-arbor, is provided with a ratchet to be engaged, in the direction of the rotation caused by said spring, when
35 under tension, by pawls, 26, carried by the drum, as indicated.

From the above description it will be understood that the cylinder is revolved by spring power, applied in a simple and effective manner, and controlled by a governor,
40 whereby the rotation is regular and the corn is evenly heated.

The operation will be understood from the foregoing description.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

In a corn popping machine, the combination with a casing having contiguous popping and receiving chambers, and an intermediate
50 partition provided with a discharge opening; of a revoluble popping cylinder having opposite parallel side walls, said walls having an inlet and a discharge opening, respectively, a cylindrical outer shell connecting said op-
55 posite parallel side walls and of fine mesh wire cloth, said outer shell being provided with a transverse refuse-slot L, a spirally-disposed elevating and separating larger mesh wire-cloth web G, coiled inside of the outer
60 shell and leading from a point at one end near the center, adjacent to the outer shell at its outer end, a metallic slot-guard M, connecting the outer end of said web to the outer shell and spanning the refuse-slot L, a smooth me-
65 tallic cone-shaped discharging chute H, arranged horizontally within the center of the cylinder and forming a direct continuation of the spirally disposed web, said chute being flared into the discharge opening of one of
70 said parallel side walls, an annular flared guard flange P, secured over the flared extremity of the discharge chute and projecting into the receiving chamber of the casing, a hopper leading into the inlet opening of
75 the cylinder, and automatic operating mechanism, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

RICHARD W. HACKER.

Witnesses:

H. C. KLEINSCHMIDT,
W. E. BELL.