

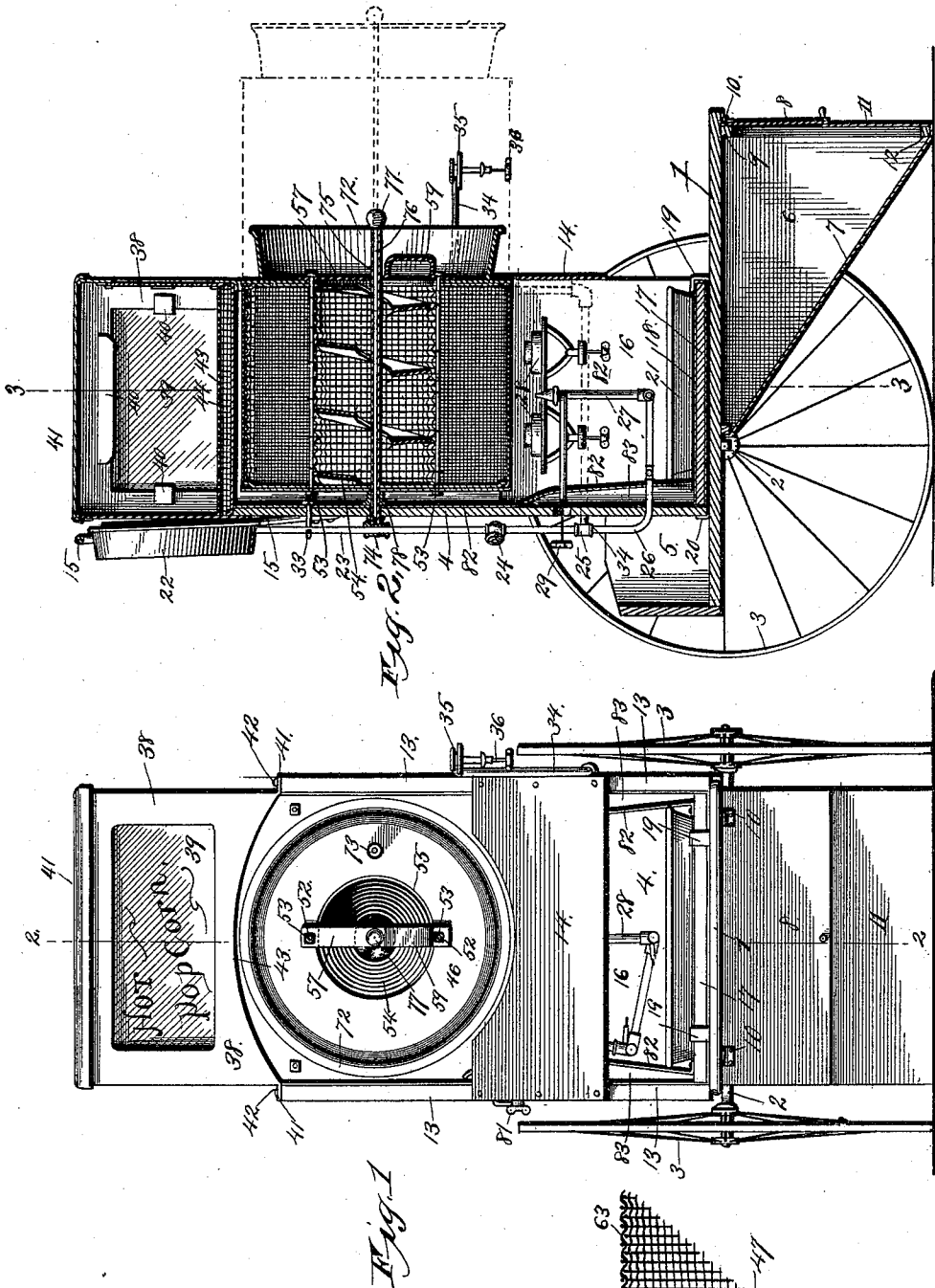
(No Model.)

2 Sheets—Sheet 1.

A. B. OLSON.
PORTABLE CORN POPPER.

No. 478,353.

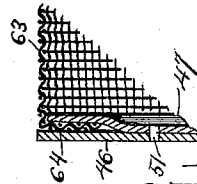
Patented July 5, 1892.



Witnesses.

Geo. H. Hopp
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Fig. 3.



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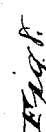
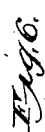
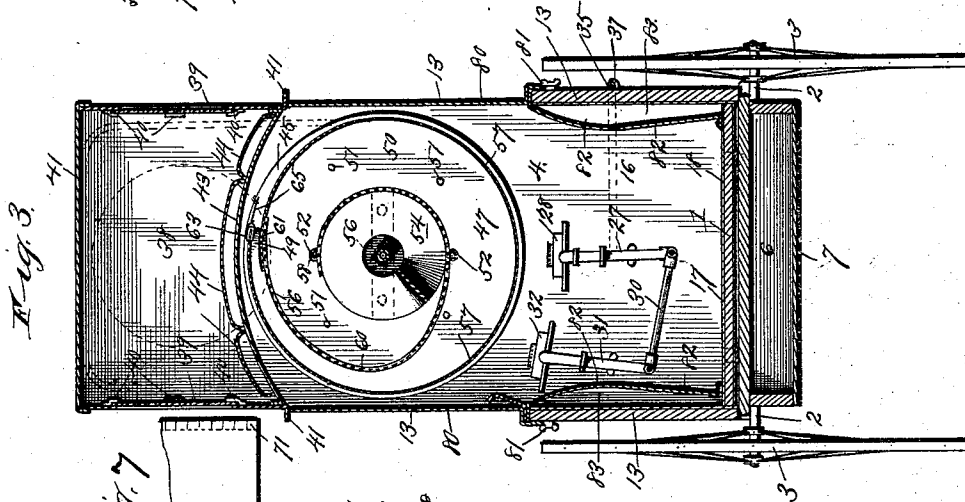
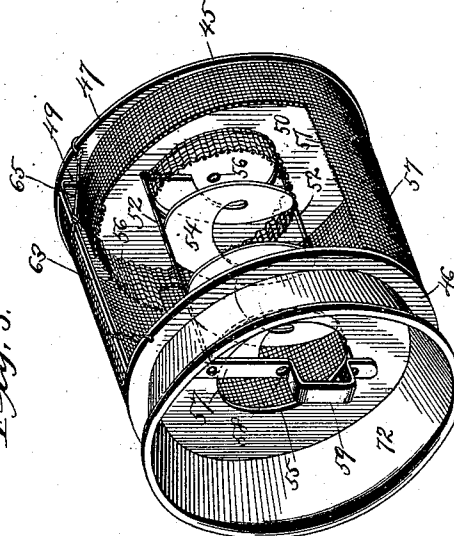
(No Model.)

2 Sheets—Sheet 2.

A. B. OLSON.
PORTABLE CORN POPPER.

No. 478,353.

Patented July 5, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

ANDREW B. OLSON, OF KANSAS CITY, MISSOURI.

PORTABLE CORN-POPPER.

SPECIFICATION forming part of Letters Patent No. 478,353, dated July 5, 1892.

Application filed November 3, 1891. - Serial No. 410,758. - (No model.)

To all whom it may concern:

Be it known that I, ANDREW B. OLSON, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Portable Corn-Poppers, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to machines for popping corn, roasting peanuts, and for various other similar purposes; and the objects of my invention are to produce a machine of this class which shall be simple, durable, and comparatively inexpensive in construction and capable of easy propulsion from place to place as the exigencies of such itinerant business may demand; furthermore, to produce a corn-popping or nut-roasting machine which shall fulfill all of the requirements as to heating, illumination, storage of materials, and ready delivery of goods to which this class of machines are subjected; also, to produce a machine which shall be compact, light, and slightly in appearance and the various operations of which can be effected with rapidity and ease, and, finally, to produce means whereby the construction and repair of the cylinder or drum of the machine shall be greatly simplified and facilitated.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a front elevation of a corn-popping machine constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the same on the line 2 2 of Fig. 1. Fig. 3 is a transverse vertical section of the same on the line 3 3 of Fig. 2. Fig. 4 is a central vertical longitudinal section of the popping cylinder or drum and of the immediately-adjacent portion of the casing or housing of the machine, showing a modified form of the extensible support for the cylinder or drum, the parts being shown on an enlarged scale. Fig. 5 is a detached perspective view, also on an enlarged scale, of the popping drum or cylinder, said drum or cylinder being partially

broken away to more clearly illustrate certain details of its construction. Fig. 6 is a central vertical longitudinal section, on a reduced scale, of a modified form of cylinder or drum, designed particularly for roasting peanuts and other similar substances. Figs. 7 and 8 are detached plan views of fragments of the peripheral casing of the drum shown in Fig. 6, said fragments also illustrating certain details of construction hereinafter described. Fig. 9 is a transverse vertical section of a portion of one end of the popper-cylinder, showing the manner of securing the edges of the meshing.

In said drawings, 1 designates the base or bottom piece of the machine, said base or bottom piece being of wood and of oblong rectangular form and extending horizontally when the machine is standing in proper operative position. Immediately beneath this base-piece is located the horizontal carrying-axle 2 of the machine, said axle extending transversely of the machine and protruding at its ends beyond opposite sides of the same. Upon these protruding ends or spindles of the axle 2 are mounted two carrying-wheels 3, which are of any suitable or preferred type of construction. The rear portion of the base-piece or bottom 1 extends a suitable distance beyond the rear side or back 4 of the main casing of the machine, and upon this rearwardly-extending portion rest the back and side walls of a receptacle or compartment 5, the front of which is formed by the back 4 of the main casing, and which is designed to contain the empty bags or other packages into which the popped corn or roasted nuts are to be deposited for delivery, the said chamber being also designed to receive the butter, salt, and other condiments which are used in the business. The front portion of the base-piece or bottom 1 extends a suitable distance beyond the front of the main casing of the machine, and to the under side of this forwardly-extending portion are secured the bottom, front, and side walls of a compartment 6, which is designed to receive the corn or nuts in bulk while the same are awaiting popping or roasting, the bottom of said receptacle preferably extending obliquely forward and downward, as shown in Fig. 2.

In order to afford convenient access to the

interior of the receptacle 6 for the purpose of removing the corn or nuts therefrom for popping or roasting, a door 8 is secured at its upper edge or margin by suitable hinges 10 to a head 9, which is in turn secured to the under side of the base 1 near its front edge or margin. The lower edge or margin of this door 8 rests, when the door is closed, against the upper edge or margin of a face plate or piece 11. It is to be observed that the side walls of this receptacle 6 are triangular in form and that the ends of the face plate or piece 11 are of such height or width that when the machine is in normal stationary position the front of the machine is supported by the front lower angles of the side walls and the lower margin of the front piece 11, a cleat 12 being preferably located at the angle of the juncture of the bottom 7 with the front piece 11 for strengthening purposes.

The main casing of the machine is composed of the back 4, the side walls 13, and a front piece 14 and is of oblong rectangular form, resting upon the base 1 and occupying a vertical position when the machine is in its proper stationary position. A suitable handle-bar 15 (preferably of inverted-U form) is secured at its ends to the upper portion of the back 4 of the main casing and serves as the means for facilitating the propulsion of the machine from place to place, as desired, the operator or attendant grasping the handle 15 and tilting the machine backward slightly, so as to clear the receptacle 6 from the ground, and thus pushing the machine along. The lower compartment 16 of the main casing of the machine constitutes the heating or fire chamber, the bottom of said compartment or chamber being formed by a bottom piece 17, which extends from front to rear and from side to side of the main casing and which is preferably protected by a sheet-metal covering 18 in order to prevent all possibility of destruction by fire. This bottom piece is retained in position by two or any desired number of inverted-L-shaped stops 19, which overlap the front margin of the bottom piece 17, the rear edge of said bottom piece being secured to the lower margin of the back 4 by any desired number of angle-strips 20.

Between the lower margin of the front piece 14 of the main casing and the bottom piece 17 is left an opening for the admission of air into the heating chamber or compartment 16 for supporting combustion of the fuel, and said opening also serves to afford access to the interior of said chamber or compartment for inserting a suitable pan or receptacle 21 into and removing the same from the compartment. This pan or receptacle rests upon the bottom piece 17 and serves to receive the husks which fall from the popping cylinder or drum (to be hereinafter described) during the operation of popping the corn or roasting the nuts.

22 designates a suitable tank or reservoir for gasoline or other liquid fuel, said reservoir or tank being preferably located well up

at the upper part of the back of the main casing of the machine. From this tank or reservoir 22 leads downward a main supply-pipe 23, which is provided with a suitable cut-off valve 24, and to the lower end of which, connected by a suitable coupling 25, a branch supply-pipe 26 is attached. This branch pipe 26 is of approximately J form and passes horizontally through the back 4 of the main casing, and to its front end is connected a vertical pipe 27, to the upper end of which are in turn connected two vapor-burners 28, a valve-stem 29 passing through the back 4 of the main casing of the machine and being connected to a suitable regulating-valve located in the upper part of the pipe 27.

From the lower part of the branch pipe 26 leads a second branch pipe 30, to the outer end of which is connected a vertical supply-pipe 31, a pair of vapor-burners 32 being connected to the upper end of this pipe 31, and a suitable valve-stem similar to the stem 29 is connected to the upper part of the pipe 31 and projects through the back 4 of the casing of the machine.

The reservoir or tank 22 and the feed-pipe 23 are retained in position by the openings in the back 4 of the casing through which the branch pipe 26 passes, and also by one or more retaining-hooks 33, which extend rearward from the back 4 and embrace the pipe 23. It is to be understood that the burners 28 and 32 may be of any suitable or preferred type and that while four of these burners are described there may be more or less than that precise number, if desired. In any event, however, the burners are located in the fire or heating or combustion chamber 16, so as to stand directly beneath the popping or roasting cylinder and the warming-chamber, as hereinafter more particularly described.

To the coupling 25 is connected the rear end of a branch pipe 34, which extends horizontally along the back 4 of the main casing, thence horizontally forward along one side 13 of the same, and which is shown as extending thence vertically upward a suitable distance beside the corresponding edge of the front of the casing and as finally extending thence horizontally outward a suitable distance beyond the front of the main casing. To the front or outer end of this pipe 34 is connected a vapor-burner 35, provided with the usual regulating valve-stem 36. The pipe 34 is supported in its required position by a loop or staple 37, which projects from the corresponding side of the main casing, and it is to be understood that the burner 35 may be of the usual or any preferred type suitable for general illuminating purposes.

Upon the top of the main casing is located a warming chamber or compartment 38, which is of rectangular form, the back of this chamber or compartment being closed and its front and sides being preferably provided with transparent panels 39, of glass, mica, or other suitable material, which are retained in posi-

tion, preferably, by lips or extensions 40 at the inner sides of the margins of the openings for said panels.

A suitable lid or cover 41 is hinged to the top of the warming chamber or compartment 38, and the said compartment is designed to receive packages of pop-corn, nuts, &c., and to keep the same warm or hot while awaiting purchase. It will be seen that this chamber is located vertically above the fire or heating chamber 16, and the arrangement is such that after the heat from the burners 28 32 has acted upon the contents of the drum or cylinder (hereinafter described) it shall impinge upon the bottom of the chamber 38 and raise its interior to the desired temperature. The chamber 38 is preferably formed separate from the main casing and is secured thereto by bolts or rivets 42, which pass through flanges 41 at the bottom of the chamber or compartment.

The bottom 43 is preferably of concavo-convex form and is placed with its concave side downward, so that the heat is concentrated upon said bottom. Upon the upper convex surface of the bottom 43 is placed a false bottom 44, which is of wire-cloth or perforated sheet metal or other equivalent material arranged in the form of a series of arches and serving to prevent burning or scorching of the packages of corn or nuts by direct contact with the hot bottom 43 of the chamber.

The space intervening within the main casing of the machine between the heating-chamber 16 and the warming-compartment 38 is occupied by the popping or roasting cylinder or drum of the machine.

Referring first to Figs. 2, 3, and 5, the construction of said drum or cylinder will now be described. The drum or cylinder is of horizontal elongated form and is provided with a rear external head 45 and a front external head 46, the said heads being each of circular form marginally and of equal diameter. The rear head 45 is provided with an interior head 47, which is of spiral form marginally and which is secured to the head 45 by suitable rivets 48, the spiral marginal contour of the inner head 47 thus leaving a projecting tongue 49 at one point of the margin of the head. The front head 46 is provided with a similar inner head 50, the margin of which is likewise of spiral form and which is secured to the external head 46 by rivets 51, similar to the rivets 48 above described. The heads 45 and 46 (with their inner heads 47 and 50) are connected together by elongated tie-rods or bolts 52, which extend parallel with each other longitudinally of the cylinder or drum and which are provided with nuts 53 for retaining the heads in proper position. The cylinder or drum is also provided with an internal longitudinal spiral conveyer 54, the rear end of which is riveted or otherwise suitably secured to the inner surface of the rear inner head 47, while the front end of said con-

veyer is similarly secured to the inner surface of the front inner head 50. Two central registering openings 55 are formed through the front head 46 and the front inner head 50 and serve as the discharge openings through which the pop-corn is fed out of the drum or cylinder. A pair of registering openings 56 are formed in the center of the rear outer head 45 and its inner head 47, and a cross-bar 57, having an opening 58 midway of its length, is bolted or similarly secured to the outer side of the front outer head 46, so as to extend across its opening 55. These openings 56 and 58 are to receive the supporting-arm of the cylinder or drum, as hereinafter described, and in order to prevent bar 57 from choking the discharge-openings 55 of the cylinder or drum as the corn is being discharged said bar is provided with a U-shaped bend 59, extending outwardly from said openings 55, the bend 59 thus permitting the free exit of the corn. The sides or periphery of the drum or cylinder are composed of wire-cloth or similar foraminous material, which is composed of two portions or sections 56^a and 57^a, the inner portion 56^a being of coarser mesh than the outer portion 57^a. The inner edge of the inner coarser portion or section 56^a is secured to one of the tie-rods 52 by loops 58^a of wire or similar material; and thence the said coarser portion is carried spirally toward the outer margins of the cylinder-heads, this inner portion 56^a being of such length as to make one complete revolution around the axis of the cylinder and being also secured to the other rods 52 by similar loops 58^a of wire or similar material. Furthermore, at the point 60 this inner portion or section 56^a is extended laterally to form a pocket-like bulge or depression, which thus increases the free discharge of the corn. At the point 61 the outer end of the coarser inner meshing 56^a is stitched or otherwise secured to the inner end of the outer finer meshing 57^a, the two ends or edges overlapping each other a short distance, and the latter is carried spirally around the axis of the drum or cylinder throughout about one complete revolution, more or less, its outer end 63 terminating about opposite the point of connection of the inner end of the finer meshing with the outer end of the coarser meshing 56^a.

By reference to Fig. 9 it will be seen that the inner and outer heads of the drum or cylinder are separated by sufficient space to permit the insertion of the front and rear edges of the outer meshing 57^a, said edges being turned inward at right angles, as shown at 64, and it is to be understood that the rivets which unite the inner heads to their outer heads do not pass through these inwardly-turned edges of the outer meshing. The front and rear edges of the inner coarse meshing abut closely against the inner surfaces of the inner heads of the drum, and the outer end of the outer and finer meshing 57^a is detachably connected to the margin of the outer heads

45 and 46 by wire loops 65. It will thus be seen that by disconnecting the loops 65 the outer and inner meshings 56^a and 57^a may be readily unwound and detached from the heads of the cylinder, the inturned edges 64 readily passing outward between the inner and outer heads. This arrangement also facilitates the original attachment of the meshings and also their renewal or repair. In Figs. 6, 7, and 8 I have shown an adaptation of this construction to cylinders or drums in which peanuts and other nuts are to be roasted, 66 and 67 being the two outer heads and 68 and 69 being the inner heads. The periphery or sides of the drum are formed of sheet metal, which are either solid or perforated, as required. The body portion 70 is formed with inwardly-extending flanges 71, which are interposed between the inner and outer heads and which are either slit, as shown in Fig. 7, or V-notched, as shown in Fig. 8, so as to permit the sheet-metal body portion to be bent into cylindrical form. It is to be observed, further, that the inwardly-extending edges of the meshing 57^a are similarly slit or notched in order to permit the meshing to be wound spirally, as required, and that the sheet-metal body portion can be thus readily attached to or unwound from the drum-heads, as desired.

To the outer surface of the front cylinder-head 46 of the corn-popping cylinder first described is secured or formed an outwardly extending and flaring ring or deflector 72, which as the popped corn is discharged from the cylinder through the openings 55 causes said corn to fall entirely clear of the front of the main casing of the machine and to fall properly into a pan or box or other suitable receptacle which is to be set upon the forwardly-extending portion of the base 1. A suitable handle 73 is also secured to the front head 46 and serves as the means for revolving the cylinder while the corn is being popped and discharged.

Referring back to Figs. 1, 2, and 3, I will describe the devices for supporting the drum or cylinder in operative position and for permitting its outward movement when it is desired to entirely empty the cylinder. 74 designates a collar or coupling which is secured to the feed-pipe 23 at a point opposite the openings 56 in the rear heads of the drum when said drum or cylinder is in operative position. To this collar or coupling is connected the rear end of a tubular arm or sleeve 75, which extends horizontally forward through the back 4 of the main casing and which is also of such length as to extend not only through the openings 56, but also through the opening 58 in the cross-bar 57. The front end of this tubular arm or sleeve 75 is left open, and within said arm works an extension-rod 76, having at its outer end a head 77, a suitable washer 78 surrounding the inner part of the arm 75 and being interposed between the inner head 45 and the back 4 when the cylinder is in its normal retracted position.

After the unpopped corn has been placed in the cylinder the latter is revolved from left to right a sufficient number of times to thoroughly subject the corn to the roasting or popping action of the flames from the burner. Subsequently the cylinder is rotated in the opposite direction, thus causing the spiral meshing within the cylinder to direct the corn to the spiral conveyer, said conveyer in this instance automatically and continuously discharging the corn from the cylinder during this reversed rotation of the same. Now when it is desired to discharge the entire contents of the cylinder said cylinder is drawn forward out of the main casing, the head 77 being engaged by the front head of the cylinder, thus drawing the extension-rod 76 outward also, as indicated in dotted lines in Fig. 2, and said rod supporting the cylinder in its outward or discharging position upon the sleeve or arm.

In Fig. 4 I have shown a modified form of extensible support for the cylinder, but which embodies the same essential principles as those above described. In this instance a rod 78 is connected at its inner end to the collar or coupling 74, and a sleeve 79 is carried axially by the cylinder, the ends of said sleeve being secured to the front and rear outer heads of the cylinder. When the drum or cylinder is moved outward or forward, the sleeve moves with it and supports the drum upon the rod.

In order to permit visual inspection of the contents of the drum or cylinder, two doors 80 are hinged at their rear edges to the rear or back 4 of the main casing, and these doors close the sides of the compartment in which the drum or cylinder is located, said doors each being retained normally in closed position by turn-buttons 81, as shown. Thus when the doors 80 or either of them are opened the drum and its contents can be clearly seen and the progress of the popping watched. In order to further protect the casing from injury from the heat and flame, an internal lining 82 of sheet metal is secured to the back and sides of the casing, said lining extending upward to the top of the back and to the tops of the sides 13. At their lower parts these lining portions are extended forward, so as to form air-spaces 83 at the back and sides of the heating-chamber 16.

The functions of the several parts of the machine having been explained throughout the above description, it is not thought that any detailed description of the general operation of the machine is necessary; but it is to be observed that great economy of fuel-consumption is attained, because the heating and illuminating burners are all supplied from the same reservoir, and, furthermore, the same burners which furnish the heat for popping or roasting also furnish the heat for the warming-compartment 38, this being due to the fact that the cylinder and the compartment are placed vertically above the burners.

It is of course obvious that a second illuminating-burner 35 can be arranged at the opposite side of the front of the machine, if desired.

5 From the above description it will be seen that I have produced a machine for popping corn, roasting nuts, and for other similar purposes which is simple and comparatively inexpensive in construction, which is readily
10 portable, and which is also very compact in its construction and arrangement, and, finally, that I have produced a machine which fulfills all of the various requirements of this class of trade as to storage, facility of operation, discharge, delivery, &c.

15 Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A machine for popping corn, &c., comprising a drum or cylinder having double
20 heads and a removable peripheral casing having its edges turned inward and inserted between the sections of each head, substantially as set forth.

25 2. A machine for popping corn, &c., comprising a drum or cylinder having double heads and a peripheral casing having its edges turned inward and inserted between the sections of the heads and having its outer end
30 detachably connected to said heads, substantially as set forth.

3. A machine for popping corn, &c., comprising a drum or cylinder having double
35 heads composed each of an outer member of circular marginal contour and an inner member of spiral marginal contour and a peripheral casing composed of an inner coarser meshing and an outer finer meshing and arranged spirally between said cylinder or drum
40 heads, the outer meshing having its edges turned inward and interposed between the head members and having its outer end detachably connected to the heads, substantially as set forth.

45 4. A machine for popping corn, &c., comprising a drum or cylinder having double heads, central openings formed in said heads, a spiral conveyer extending longitudinally of said drum between the heads and in alignment with the axes of their openings, and a
50 detachable peripheral casing extending spirally between the heads and having its edges turned inward and inserted between the head-sections, the outer end of the casing being detachably connected to the said heads, substantially as set forth.

5. A machine for popping corn, &c., comprising a drum or cylinder having double heads, central openings formed through said heads, a peripheral casing having its edges
60 turned inward and inserted through said head-section, a spiral conveyer extending longitudinally between the heads and in axial alignment with the openings, and a cross-bar secured to the front head and extending
65 across its opening and also provided with a U-shaped section, substantially as set forth.

6. An improved portable machine for popping corn, &c., comprising a vertical main casing and a closed warming-compartment
70 located at the top of the main casing and having a closed and arched bottom and a false bottom of foraminous material composed of a number of arch-formed sections, substantially as set forth.

75 7. A portable machine for popping corn, comprising a vertical main casing, a vertical feed-pipe for liquid fuel located outside of the casing and having a tubular supporting-arm extending horizontally forward through
80 the back of said casing, and a popping drum or cylinder located within the casing and having an axial rod working within the tubular arm, so as to permit the drum or cylinder to be moved outwardly and inwardly upon the
85 arm, the said arm and tubular axial rod constituting the sole support for the drum or cylinder, substantially as set forth.

8. An improved machine for popping corn, &c., comprising a revoluble drum or cylinder
90 having a discharge-opening in its outer head and a circular outwardly extending and flaring annular deflector surrounding said opening, substantially as set forth.

In testimony whereof I affix my signature in
95 the presence of two witnesses.

ANDREW B. OLSON.

Witnesses:

H. E. PRICE,
JNO. L. CONDRON.