

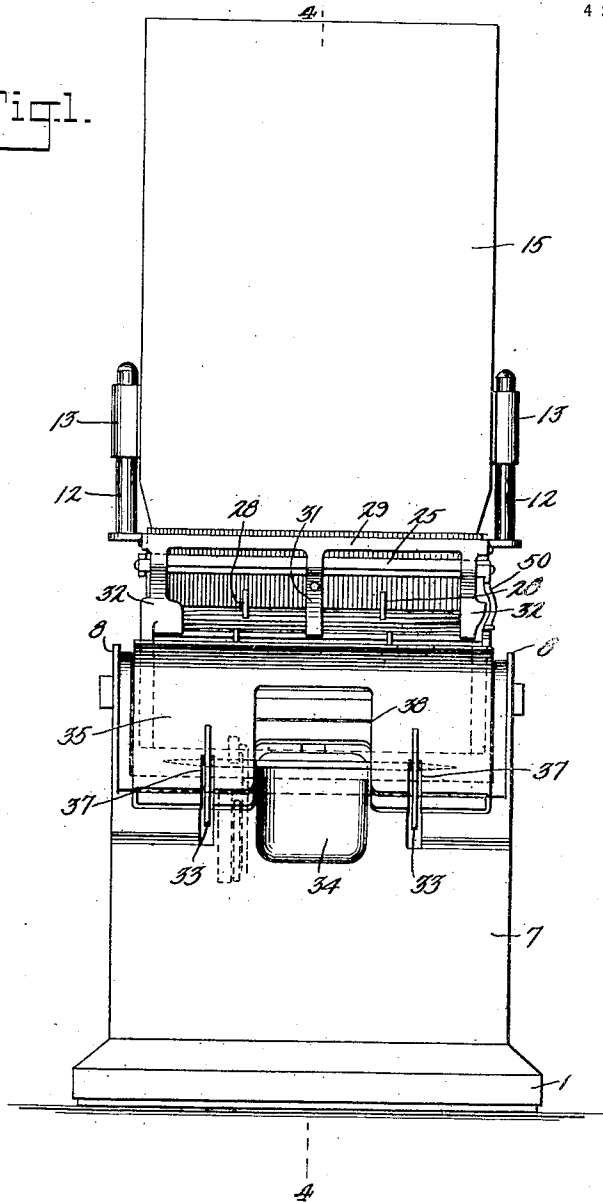
J. E. KENKEL.
TOOTHPICK DISPENSING DEVICE.
APPLICATION FILED MAR. 11, 1920.

1,371,173.

Patented Mar. 8, 1921.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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4 SHEETS—SHEET 2.

Fig. 2

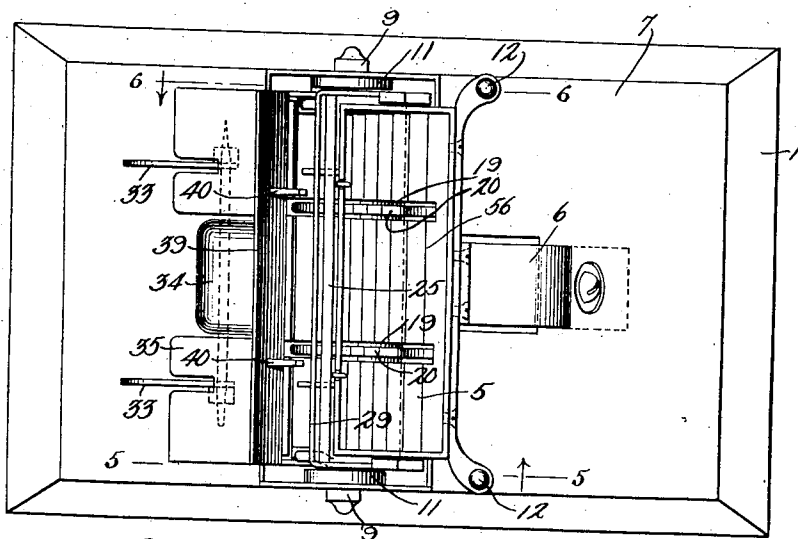
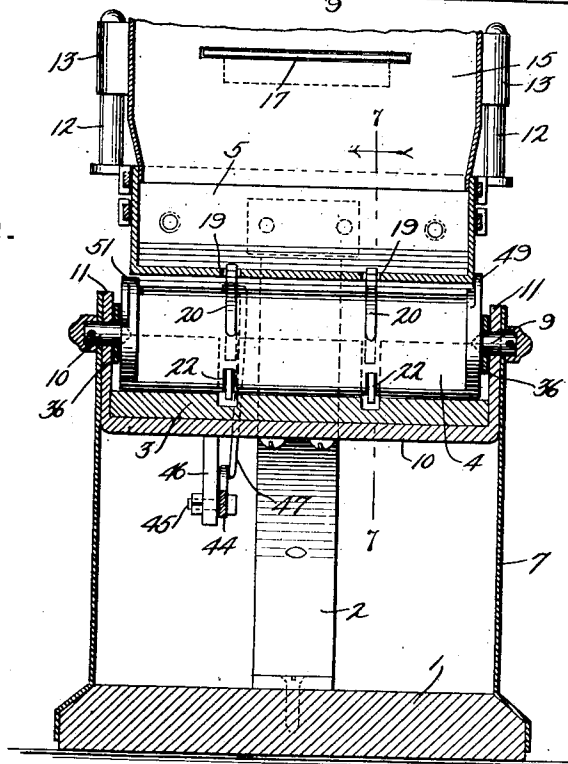


Fig. 3.



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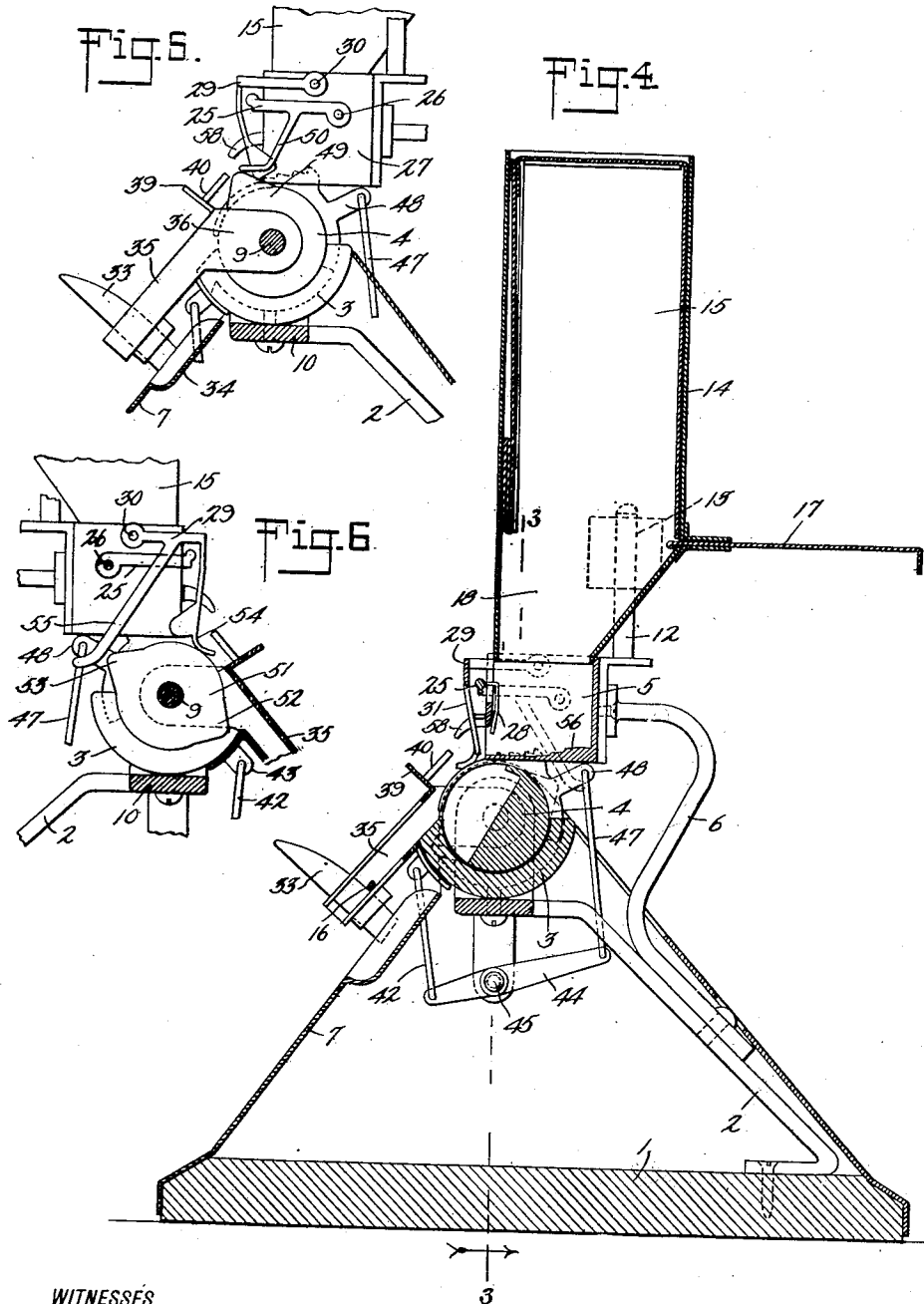
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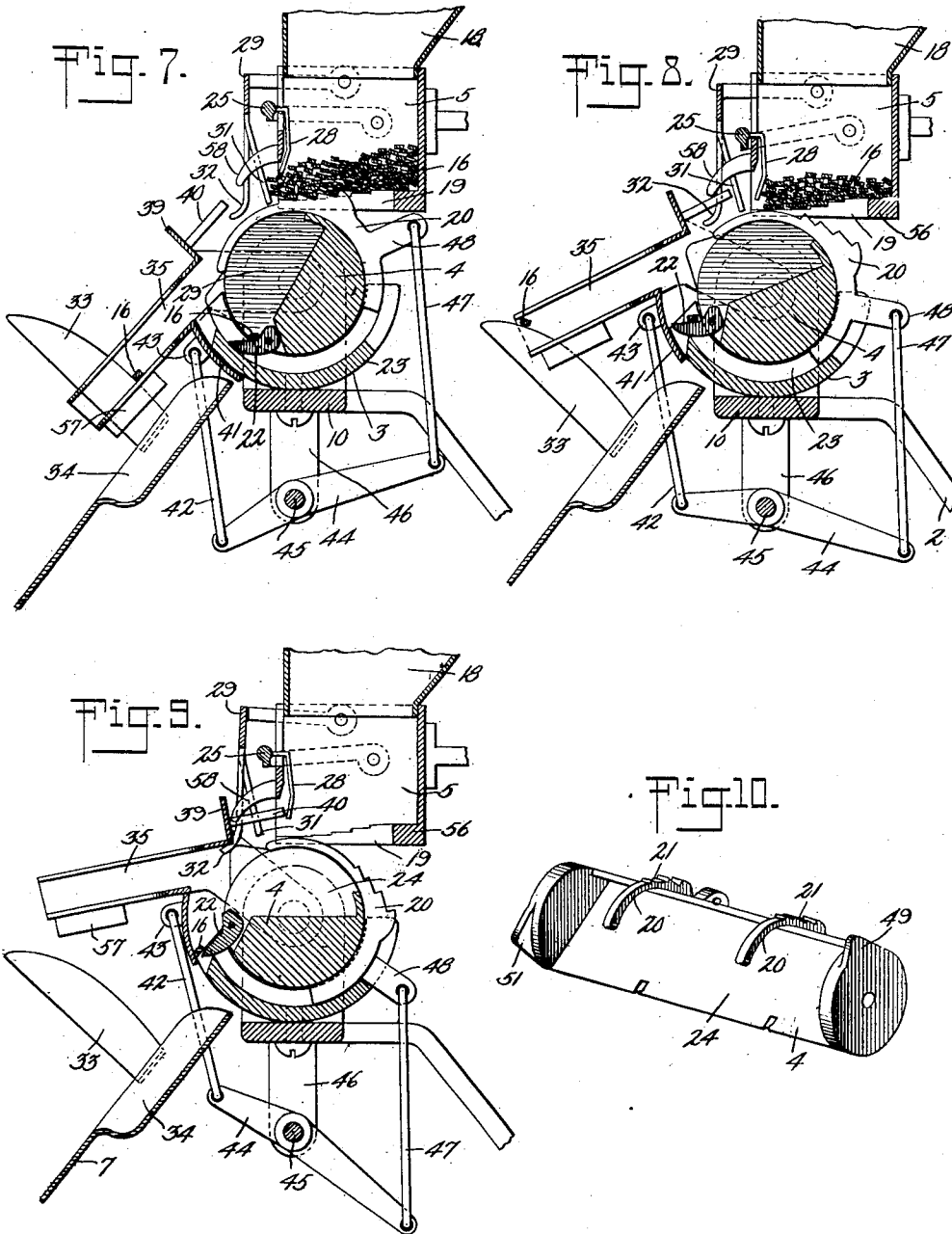
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TOOTHPICK-DISPENSING DEVICE.

1,371,173.

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To all whom it may concern:

Be it known that I, JOHN E. KENKEL, a citizen of the United States, and a resident of Great Falls, in the county of Cascade and State of Montana, have invented a new and Improved Toothpick-Dispensing Device, of which the following is a full, clear, and exact description.

This invention relates to improvements in toothpick dispensing devices, an object of the invention being to provide a device of the character stated which will present a single toothpick and which, when said toothpick is removed, will be operated to permit another toothpick to fall into position for removal.

A further object is to provide a device of the character stated which will dispense toothpicks from their original package without the toothpicks coming in contact with the hands of any but the one removing the same.

A further object is to provide a device of the character stated which will enable the user to remove a toothpick without bringing his hands in contact with any part of the machine.

A further object is to provide a toothpick dispensing device which will be entirely sanitary and which is especially adapted for use in restaurants and public places, and which will maintain a toothpick in position for removal, and which will be operated by the removal of the toothpick to cause another toothpick to fall into such position.

With these and other objects in view the invention consists in certain novel features of construction, and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view in front elevation illustrating my improved device;

Fig. 2 is a plan view of the device with the reservoir removed;

Fig. 3 is a view partly in section and partly in elevation, the view being taken on the line 3—3 of Fig. 4;

Fig. 4 is a view in vertical section on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary view in section on the line 5—5 of Fig. 2;

Fig. 6 is a fragmentary view in section on the line 6—6 of Fig. 2;

Fig. 7 is an enlarged fragmentary view in section on the line 7—7 of Fig. 3, showing the parts in normal position;

Figs. 8 and 9 are views similar to Fig. 6, showing the parts in different positions; and Fig. 10 is a perspective view of the ejector 4.

1 represents a base having a bracket 2 secured thereon, said bracket at its upper end supporting a curved bearing 3 in which an ejector 4 is mounted and above the ejector a box 5 is supported and a handle 6 connects the bracket 2 with the box 5 and also serves as a support for the box. A casing 7 is secured to the base 1 and incloses the bracket 2 and extends up to the bearing 3 and has perforated extensions 8 at its upper end receiving journal pins 9 having thrust bearings in the ends of the ejector 4 and providing rotary mounting for the latter. The parts are further strengthened by means of a transversely positioned angle bracket 10 which forms a part of the bracket 2 and has upwardly projecting perforated ends 11 receiving and providing support for the pins 9.

The box 5 is provided with upwardly projecting pins 12 which receive guide sleeves 13 thereon. These guide sleeves 13 are fixed to the outside of a reservoir 14, the latter adapted to support a box or carton containing toothpicks 16. It is to be understood that this box or carton 15 may constitute the original package containing the toothpicks and is inserted in the reservoir with the lower end of the box open, and a sliding gate 17 is provided in the reservoir 14 which holds back the toothpicks until they are desired and when said gate is opened, the toothpicks will fall through a chute 18 at the lower end of the reservoir and be directed into the box 5. The box 5 is provided in its bottom with slots 19 through which curved ejector fingers 20 constituting a fixed part of the ejector 4, project and are movable and these fingers 20 have notched or toothed outer faces 21 to provide shoulders to engage a toothpick 16 and force the latter through the open lower front portion of the box 5 and deliver a toothpick in position to fall onto a series of pivoted holders 22 carried by the ejector 4 and movable in grooves 23 in the upper face of the bearing 3. These grooves 23 also accommodate the ejector fingers.

It will be noted particularly by reference

to Figs. 7, 8, 9 and 10, that the rotary ejector is cut out or recessed throughout the greater portion of its length as shown at 24, providing ample space for the movement of the toothpicks so that they can fall into position on the pivoted holders 22 as shown in Fig. 7.

A frame 25 is pivotally supported on the ends of the box 5 as shown at 26, and extends across the front of the box and is provided with a series of relatively light wire teeth 28 which are located in the front portion of the box 5 and serve to hold back or retard the movement of the toothpicks. A second frame 29 is also positioned across the front of the box 5 and is pivotally connected to the ends of the box as shown at 30. This frame 29 is made with a number of lugs 31 which normally prevent the escape of the toothpicks from the box 5 and is also provided with curved lugs 32 which act as deflectors to compel the toothpicks to fall downwardly onto the pivoted holders 22 when the toothpicks are ejected by the fingers 20. A pair of tongues 33 are fixed to and project from the casing 7 and operate as supports for a toothpick 16 when the latter is in dispensing position, and said casing between said tongues 33 is depressed or recessed, as shown at 34, to provide ample space for the fingers of the operator to permit him to grasp the toothpick.

A guide chute 35 is made at its upper outer ends with perforated ears 36 pivotally mounted on the pins 9. This chute 35 is made with slots 37 receiving the tongues 33 and at its lower intermediate portion is recessed, as shown at 38, which recess registers with the depression or recess 34 and provides space for gripping the toothpick. The chute 35 at its upper end is made with an outwardly projecting flange 39 carrying a series of fingers 40 which, when the chute is moved on its pivots, will be projected through the lower open portion of the box 5 and force back the excess of toothpicks which might escape.

The chute 35 at its lower face is made with a curved lip 41 which rides under the bearing 3 and a link 42 connects a perforated lug 43 on the lip 41 with the short end of a lever 44, the latter pivotally mounted on a shaft 45 suspended in hangers 46 secured to the transverse bracket 10. The long end of the lever 44 is connected by a link 47 with a crank arm 48 fixed to the ejector 4 so that at each operation of the chute, a rotary or partially rotary movement is imparted to the ejector and by reason of the fact that the lever 44 is pivotally supported nearer one end than the other, the exact compensation for the difference in movements of the chute and the ejector is regulated to give the desired results.

The frame 25 is operated by a cam 49 on

one end of the ejector 4, which cam engages a projection 50 on the frame, as shown clearly in Fig. 5. The frame 29 is operated by a cam 51 on the opposite end of the ejector 4 and this cam 51 has a pair of cam faces 52 and 53, one of which engages a projection 54 on the frame 29 to permit the escape of the toothpicks, and the other cam face engages a projection 55 on the frame 29 to insure the movement of the frame to closing position in the event that the toothpicks should crowd forward in the box 5.

As clearly shown in the sectional views, the bottom 56 of the box 5 inclines or is of stepped formation downwardly from its rear end to its forward end so as to assist in feeding by gravity the toothpicks into position for ejecting.

It will be noted that when a toothpick 16 is in the chute 35 and resting on the tongues 33, the said toothpick operates as a coupling device and cannot be removed from the tongues 33 without swinging the chute 35 outwardly so that every time a toothpick is removed, it causes a movement of the chute 35 on its pivots and this movement of the chute 35 is imparted to the other movable parts of the device so that at each removal of a toothpick, the device is caused to operate to position another toothpick ready for removal. I have illustrated counterweights 57 on the bottom of the chute 35 to return the latter to normal position and it is obvious that such counterbalanced weights may be located at any desired part of the device so as to return the parts to normal position.

The operation is as follows: The original package or carton 15 containing the toothpicks is opened at its end and while the reservoir 14 is in an inverted position, is inserted into the open end of said reservoir and the gate 17 is closed so that when the reservoir is placed in normal position on the pins 12, the gate 17 will prevent the escape of the toothpicks. When the gate 17 is opened, the toothpicks 16 will fall into the box 5 and the parts will be in the position shown in Fig. 7. When the toothpick 16 resting on the tongues 33 is removed, it will cause the outward swinging movement of the chute 35 as above explained, and this movement of the chute, through the medium of link 42, lever 44 and link 47, will impart a partially rotary movement to the ejector 4 moving the same first to the position shown in Fig. 8, and then to the position shown in Fig. 9. During this upward and outward swinging movement of the chute, the cam 52 engages the frame 29 to permit the escape of a toothpick from the front of the box and at the same time the fingers 40 on the chute are projected into the front of the box and force back the excess of toothpicks allowing but a single toothpick to

fall into operative position on the ejector fingers 20 of the ejector 4. This movement of the chute 35 also operates the frame 25 to move the wire teeth 28 downwardly and inwardly and cut off the excess of toothpicks which might otherwise escape.

In other words, by reason of the action of the cams and the parts above described, but a single toothpick is allowed to position itself on the ejector fingers 20 so that when the ejector turns to its former position, as shown in Fig. 7, a toothpick will be dropped therefrom onto the pivoted holders 22 as shown in Fig. 7.

On the next operation or movement of the chute 35 these holders 22 will carry the toothpick to the position shown in Fig. 8 and then to the position shown in Fig. 9, causing the toothpick to rest upon the lip 41 and as the chute returns to normal position, the toothpick will be forced by the pivoted holders along the lip and into the chute 35 where it will fall into dispensing position on the tongues 33.

Stationary guide lugs 58 are also provided on the front of the box to deflect the toothpicks downwardly.

While I have referred to my improved device as a toothpick dispensing device, it is obvious that it might be used for matches or other similar articles, but its purpose is primarily for toothpicks, although I do not wish to be limited to any particular use of the device.

Various slight changes might be made in the general form and arrangement of parts described without departing from the invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A toothpick dispensing device, comprising a box adapted to receive toothpicks therein, an ejector having partially rotary movement below the box, curved ejector fingers movable through the bottom of the box and having notched upper edges adapted to receive and eject toothpicks one at a time, a pivotally mounted chute, means operatively connecting the chute and the rotary ejector compelling their simultaneous movement, said chute having slots in its free end, and a pair of stationary tongues normally projecting through said slots and limiting the movement of a toothpick

through the chute, said toothpick operating as a coupling device between the tongues and the chute and compelling a pivotal movement of the chute before the toothpick can be removed from the end thereof.

2. A toothpick dispensing device, comprising a base, a bracket on the base, a curved bearing on the bracket, a rotary ejector mounted in the bearing, a toothpick containing box above the ejector and having slots therein, curved ejecting fingers on the ejector movable through said slots, pivoted toothpick holders carried by the rotary ejector and adapted to support toothpicks falling from the ejector fingers, a pivotally mounted chute adapted to receive a toothpick from said pivoted holders when the ejector and the chute are moved in opposite directions, and means compelling the simultaneous movement of the chute and the ejector.

3. A toothpick dispensing device, comprising a base, a bracket on the base, a curved bearing on the bracket, a rotary ejector mounted in the bearing, a toothpick containing box above the ejector and having slots therein, curved ejecting fingers on the ejector movable through said slots, pivoted toothpick holders carried by the rotary ejector and adapted to support toothpicks falling from the ejector fingers, a pivotally mounted chute adapted to receive a toothpick from said pivoted holders when the ejector and the chute are moved in opposite directions, a pivotally supported lever, and links connecting the respective ends of said lever with the chute and the ejector respectively.

4. A toothpick dispensing device, comprising a base, a bracket on the base, a curved bearing on the bracket, a rotary ejector mounted in the bearing, a toothpick containing box above the ejector and having slots therein, curved ejecting fingers on the ejector movable through said slots, pivoted toothpick holders carried by the rotary ejector and adapted to support toothpicks falling from the ejector fingers, a pivotally mounted chute adapted to receive a toothpick from said pivotal holders when the ejector and the chute are moved in opposite directions, a lever pivotally supported nearer one end than the other, a link connecting the shorter end of said lever with the chute, and a link connecting the longer end of said lever with the ejector.

JOHN EDWIN KENKEL.