July 21, 1959 E. E. WHITE 2,895,638

TOOTHPICK DISPENSER

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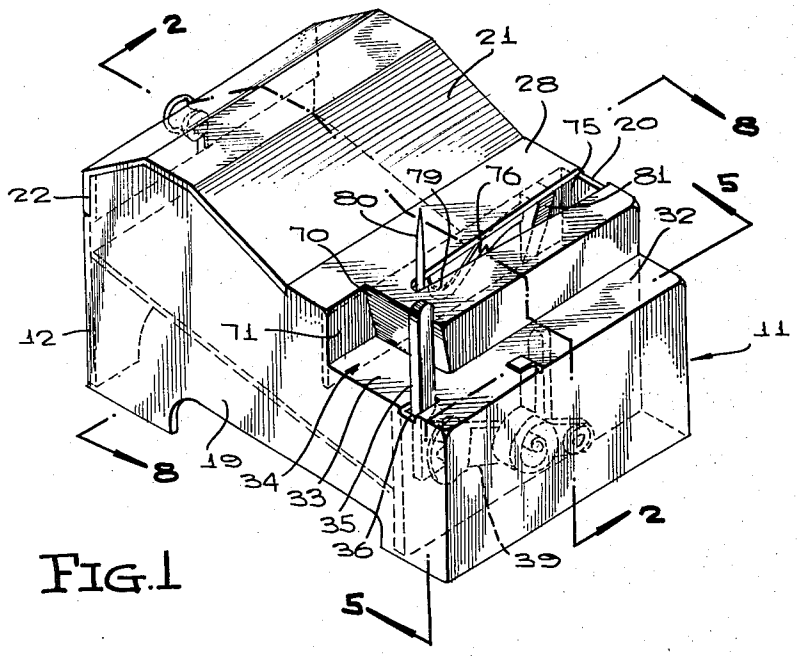


FIG. 1

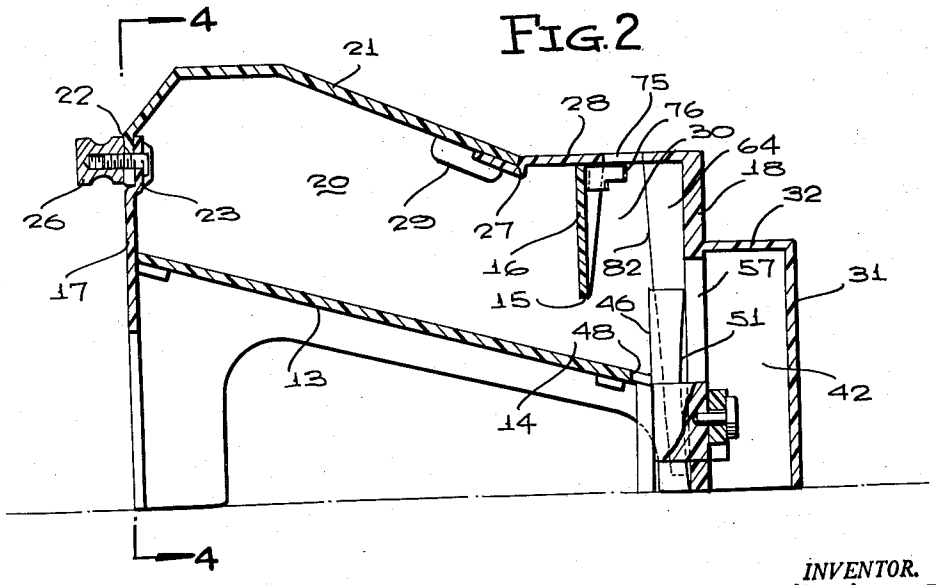


FIG. 2

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FIG. 3

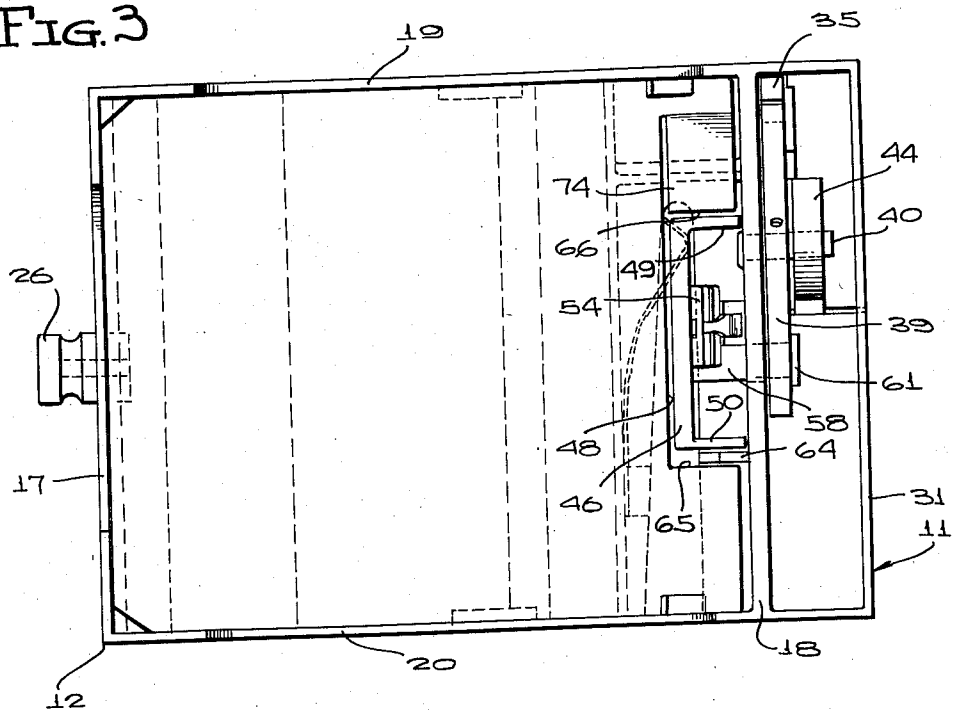


FIG. 8

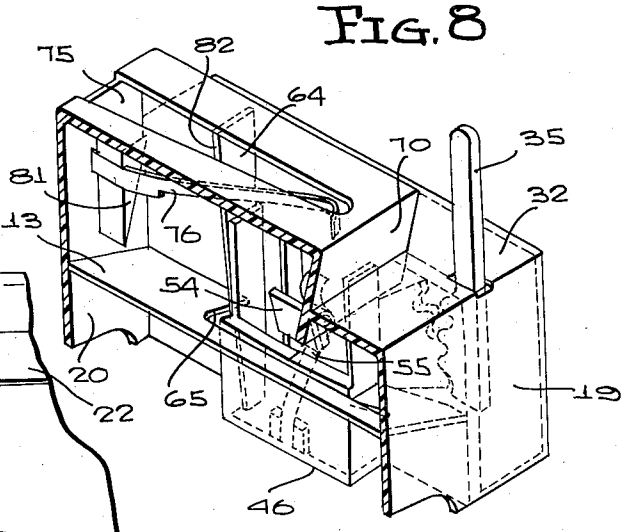
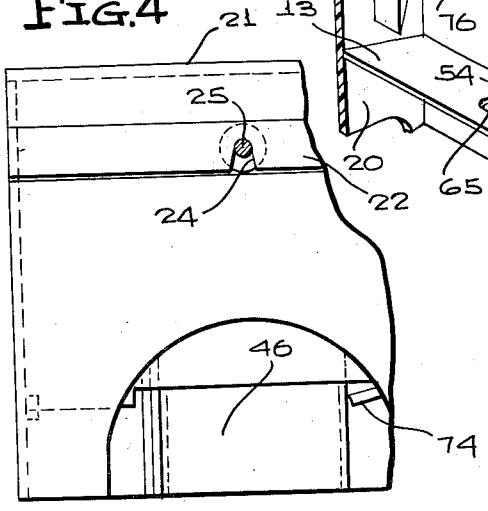


FIG. 4



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FIG. 5

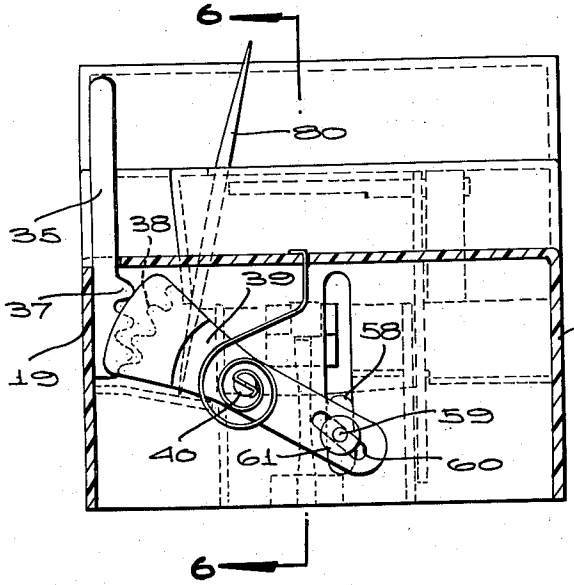


FIG. 6

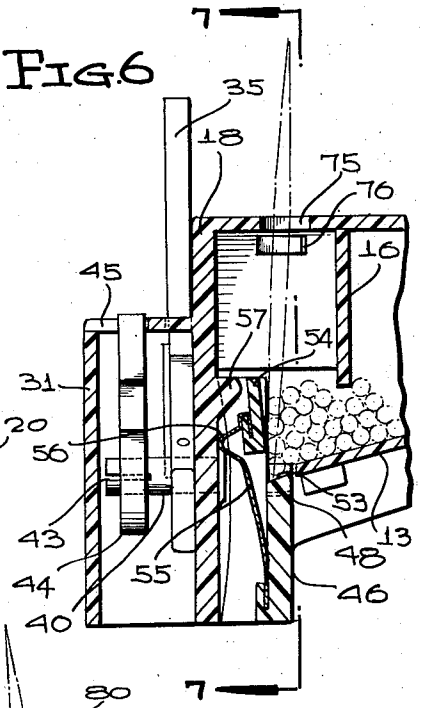
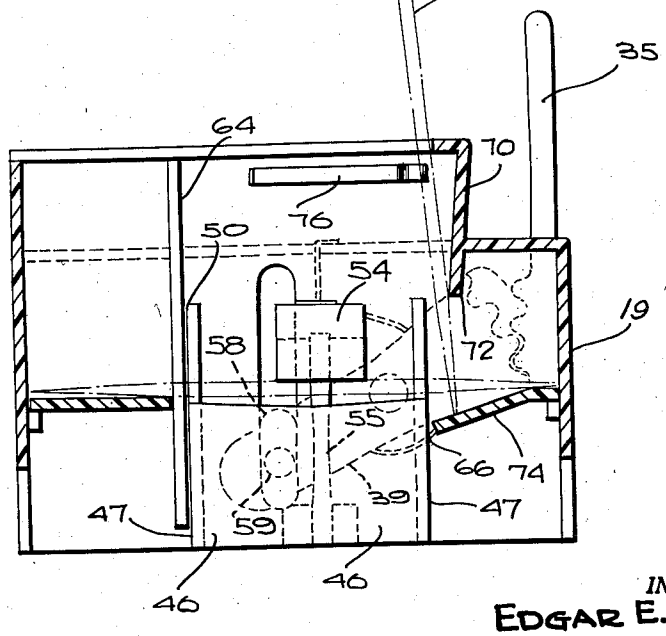


FIG. 7



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TOOTHPICK DISPENSER

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Application December 7, 1956, Serial No. 626,951

3 Claims. (Cl. 221—224)

This invention relates to dispensers, and more particularly to a toothpick dispensing apparatus adapted to contain a quantity of toothpicks and to dispense one toothpick at a time.

A main object of the invention is to provide a novel and improved toothpick dispenser which is simple in construction, which is easy to load, and which stores a quantity of toothpicks and dispenses one toothpick at a time.

A further object of the invention is to provide an improved toothpick holder and dispenser, the holder and dispenser being relatively inexpensive to manufacture, being neat in appearance, being arranged to protect toothpicks contained therein against contamination, and operating in a reliable and convenient manner to dispense one toothpick at a time.

A still further object of the invention is to provide an improved toothpick dispenser which is durable in construction, which is relatively compact in size, and which operates without clogging.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a perspective view of an improved toothpick holder and dispenser constructed in accordance with the present invention.

Figure 2 is an enlarged vertical cross sectional view taken on the line 2—2 of Figure 1.

Figure 3 is an enlarged bottom plan view of the toothpick holder and dispenser of Figure 1.

Figure 4 is a fragmentary vertical cross sectional view taken on the line 4—4 of Figure 2.

Figure 5 is an enlarged vertical cross sectional view taken transversely through the dispenser on the line 5—5 of Figure 1.

Figure 6 is a fragmentary vertical cross sectional view taken on the line 6—6 of Figure 5.

Figure 7 is a vertical cross sectional view taken on the line 7—7 of Figure 6.

Figure 8 is a perspective view, in cross section, taken on the line 8—8 of Figure 1.

Referring to the drawings, the improved toothpick holder and dispenser is designated generally at 11. The device 11 comprises a receptacle 12 which is generally rectangular in shape and is formed with an inclined or sloping bottom wall 13, as shown in Figure 2, the receptacle being adapted to support therein a plurality of toothpicks arranged so that their axes are parallel to each other and transverse of the sloping bottom wall 13 and to feed the toothpicks by gravity towards the lowermost portion thereof through a discharge space 14 beneath the bottom edge 15 of a depending vertical transverse partition wall 16 secured in the receptacle.

The receptacle 12 comprises the vertical rear end wall 17, the vertical transverse front wall 18, and the respective vertical side walls 19 and 20, defining a rectangular enclosure in the lower portion of which the inclined bottom wall 13 is secured. The receptacle is provided with a removable top cover 21. Said top cover is adapted

to fit on the top edges of the side walls 19 and 20 and is provided with a vertical rear marginal flange 22 which is receivable in a transversely extending vertical seat 23 formed on the top margin of the rear wall 17. The flange 22 is formed at its intermediate portion with a vertical notch 24, as shown in Figure 4, which is engageable over an outwardly projecting stud 25 on which a locking nut 26 is threadedly engaged, whereby the flange 22 is tightly gripped and clamped in the seat 23 when the nut 26 is tightened. The forward marginal portion of the cover 21 is receivable in a transversely extending seat 27 formed on the rear marginal portion of a horizontal top wall segment 28 rigidly secured on the forward portion of the receptacle, the cover 21 being provided with a hook-like lug member 29 engageable beneath the edge of the seat member 27 so that the seat member receives the forward marginal portion of cover 21 therein and the hook-like lug member 29 therebeneath, as shown in Figure 2. As is readily apparent from Figure 2, the cover 21 is lockingly engaged in the seat member 27 and is rigidly secured at its rear flange 22 in the seat 23 when the nut 26 is tightened.

As shown in Figure 2 a space is defined between the upper portion of front wall 18 and the depending partition member 16, said space being shown at 30. The front wall 18 is formed with a forwardly offset lower portion 31 having the top wall 32, as shown in Figure 2, the top wall 32 having a rearwardly extending portion 33 forming part of a finger-receiving recess 34 formed in the upper left corner portion of the receptacle 12 for a purpose presently to be described.

Designated at 35 is a vertical plunger member which extends slidably through an aperture 36 in the top wall 32 located forwardly adjacent the recess 34. The lower portion of plunger 35 is formed with rack teeth 37 which meshingly engage corresponding rack teeth 38 formed on the end of a lever 39 which is rigidly secured on a transversely extending pivot shaft 40 rotatably mounted in the lower portion of front wall 18, whereby the lever 39 is disposed in the auxiliary housing, designated at 42, defined by the front wall member 31 and the top wall segment 32.

The pivot pin 40 is formed at its end with a diametral notch 43 in which is secured the inner end of a spiral spring 44, the outer end of said spiral spring extending through and being anchored by a transverse slot 45 formed in the top wall segment 32. Thus, the spiral spring 44 biases the lever 39 in a clockwise direction, as viewed in Figure 1, whereby the plunger 35 is biased upwardly.

Designated at 46 is a vertical carriage member or plate having the vertical side edges 47, 47, the plate 46 being disposed forwardly of the restricted toothpick-dispensing passage 14 and being located adjacent and parallel to the lower edge 48 of the inclined receptacle bottom wall 13. The carriage plate 46 is formed with the respective side flanges 49 and 50, said side flanges being perpendicular to the main body of the plate and being arcuately concave at their edge portions, as shown at 51, whereby the top and bottom corners of the flanges engage the inside surface of wall 18 at limited areas, minimizing frictional resistance of the carriage plate 46 with respect to wall 18. The main body portion of the carriage plate 46 is of a height such that the top edge thereof, shown at 53, is located immediately adjacent to the lower edge 48 of the inclined receptacle bottom wall 13 when the carriage plate 46 is in its lowermost position, as shown in Figure 6, whereby the lowermost toothpick in the stack supported on the bottom wall 13 will rest on the top edge 53 of the carriage plate 46. As shown in Figure 6, the edge portion 53 of the carriage plate 46 is inclined substantially in the same direction as the receptacle bottom

wall 13 and normally is substantially flush with the plane of the bottom surface of the inclined bottom wall 13 of the receptacle, to facilitate the reception of the lowermost toothpick on the edge 53.

Designated at 54 is a pusher member which is resiliently connected to the carriage plate 46 by a leaf spring 55, as shown in Figure 6, the pusher member 54 being spaced above the top edge 53 by a distance approximately equal to the diameter of a toothpick.

The pusher member 54 is substantially rectangular in shape and is of substantial area. The leaf spring 55 is formed at its upper portion with a rearwardly extending U-bend 56 which slidably engages the inside surface of the wall 18 and which is cammingly engageable with a cam-like rib 57 formed on the intermediate portion of wall 18 and being cooperable with the U-bend 56 to rotate the pusher member 54 in a clockwise direction, as viewed in Figure 6, responsive to the elevation of the carriage plate 46, whereby to push all except the lowermost toothpick of the plurality of toothpicks arranged so that their axes are parallel to each other and transverse of the sloping bottom wall of the receptacle rearwardly and to be positioned substantially in vertical alignment with the carriage plate 46 as the carriage plate moves upwardly in a manner presently to be described.

The wall 18 is formed with a vertical slot 57 which slidably receives a vertical lug element 58 formed on the carriage member 46, said lug element 58 serving to guide the carriage member vertically and being formed with a shaft portion 59 which extends through a slot 60 formed in the end portion of the lever 39. A retaining washer 61 is secured on the outer end of the shaft element 59, whereby the end portion of the lever 39 is slidably and rotatably connected to the carriage member 46, and whereby the carriage member 46 is elevated responsive to counterclockwise rotation of lever 39, as viewed in Figure 5.

A vertical guide strip 64 is secured to the inside surface of the wall 18 adjacent the carriage flange 50, as shown in Figure 3, and adjacent to one side edge 65 of the generally rectangular notch formed in the forward margin of the inclined bottom wall 13, of which the forward edge portion 48, previously described, is a part. The flange 49 of the carriage member 46 is slidably disposed adjacent the opposite side edge 66 of said rectangular notch, as is clearly shown in Figure 3.

The recess 34 is defined by the laterally facing downwardly and inwardly inclined wall element 70 and the vertical forwardly facing wall element 71, as well as by the rearward extension 33 of top wall element 32. The wall element 70 is arranged transversely of the carriage plate 46. Wall element 70 depends a substantial distance below the rearward extension 33 of the top wall member 32, as shown in Figure 7, whereby the bottom edge 72 of the wall member 70 is adapted to function as a stationary abutment against which one end portion of a toothpick engages while the intermediate portion of the toothpick is elevated by the top edge 53 of the carriage plate 46, as will be presently described. As shown in Figure 7, the abutment edge 72 is located adjacent to but is spaced from one end margin of the bottom wall 13, namely, the margin which is secured to the wall 19. As shown in Figure 7, the bottom wall 13 has the downwardly and inwardly inclined end portion 74 located below the abutment edge 72, the portion 74 terminating in the side edge 66 of the aforesaid rectangular notch formed in the forward marginal portion of said bottom wall 13. The inclined portion 74 of the bottom wall provides adequate clearance to allow the lower end portion of a toothpick to be shifted toward a substantially vertical position responsive to the elevation of the carriage plate 46 while the toothpick engages against the abutment edge 72 of wall 70.

The top wall portion 28 is formed with a tapered slot 75 located over the space 30, as shown in Figure 2, the slot extending from the side wall 20 for a substantial distance toward the side wall 19 and terminating adjacent the wall 70 of recess 34. A horizontal leaf spring 76 is secured to the upper portion of the depending toothpick-restricting partition plate 16, said leaf spring 76 having the arcuately curved, hook-like end portion 79 extending across the end portion of the slot 75, as shown in Figure 1, and serving as a supporting retainer for holding a toothpick, shown at 80, in a vertical position after the toothpick has been forced past the arcuately curved hook portion of the leaf spring.

A cam lug 81 is secured to the partition wall 16 adjacent to but spaced from the side wall 20, the cam lug 81 having its forward surface inclined upwardly and forwardly toward the slot 75 and cooperating with the upwardly and rearwardly inclined rear edge 82 of the guide strip 64 to guide a toothpick toward the slot 75 as the toothpick is being rotated from a horizontal to a vertical position by the elevation of the carriage plate 46.

As shown in Figure 1, the slot 75 flares in width toward the wall 20, the widest portion of the slot 75 being located adjacent the wall 20, so as to provide ample clearance for the end of a toothpick 80 to be elevated through the slot as the toothpick is rotated upwardly.

In using the device, a quantity of toothpicks are stacked on the inclined bottom wall 13 of the receptacle 12, the lowermost toothpick engaging on the top edge 53 of the carriage plate 46. To dispense a toothpick, the operator places his finger on the top end of the plunger 35 and pushes downwardly, the operator's finger entering the space 34. The lever 39 is rotated counterclockwise, as viewed in Figure 5, causing the carriage plate 46 to be elevated. In the initial portion of execution of the upward movement of the carriage plate or member 46, the U-bend 56 on the upper portion of leaf spring 55 cammingly engages the cam-like rib 57, causing the pusher member 54 to be shifted to the right, as viewed in Figure 6, pushing all of the toothpicks to the right, except the lowermost toothpick, which is thus held between the carriage plate 46 and the side flanges 49 and 50 of the carriage plate 46, and then the pusher member 54 is moved away from the bottom wall 13 and out of vertical alignment with the carriage plate 46. The remaining portion of execution of the upward movement of the carriage plate or member 46 causes in turn the intermediate portion of the toothpick supported on the plate 46 to engage the wall member bottom edge 72 or abutment, the end of the toothpick below the bottom edge 72 to contact and ride along the inclined portion 74 of the bottom wall 13, and the intermediate portion of the toothpick to contact and ride about the hook-like end portion 79 of the spring 76 which bridges the slot 75 and be received in the inner end portion of the slot 75 and be held in such slot portion by the hook-like end portion 79, resulting in the tilting of the toothpick from the horizontal position to the upright position in which the upper end portion projects above the slot 75 and is held in this upright position until manually removed. The parts return to their normal positions when the plunger 35 is released, preparing the apparatus to dispense the next toothpick.

While a specific embodiment of an improved toothpick dispenser has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A toothpick dispenser comprising a receptacle having a sloping bottom wall and adapted to support therein a plurality of toothpicks arranged so that their axes are parallel to each other and transverse of the sloping bot-

tom wall, a vertical carriage member mounted in said receptacle adjacent and parallel to the lower edge of said bottom wall and movable upwardly and downwardly, said carriage member having an upwardly facing portion normally aligned with said bottom wall for receiving a toothpick therefrom and elevating it on upward movement of said carriage member, a pusher member movably connected to said carriage member and spaced above the top edge of said carriage member, means moving said pusher member in turn responsive to the initial portion of execution of upward movement of said carriage member toward said bottom wall substantially into vertical alignment with said carriage member to elevate a single toothpick with the carriage member and prevent elevation of the remaining toothpicks and then away from said bottom wall and out of vertical alignment with said carriage member, and an abutment element within said receptacle spaced above said bottom wall adjacent one side margin thereof and arranged transversely of said carriage member, said carriage member being spaced inwardly of said abutment element to engage one end portion of the toothpick carried by the carriage member with said abutment element and to cause the toothpick to be tilted to an upright position responsive to the remaining portion of execution of the upward movement of said carriage member.

2. A toothpick dispenser comprising a receptacle having a sloping bottom wall and adapted to support therein a plurality of toothpicks arranged so that their axes are parallel to each other and transverse of the sloping bottom wall, a vertical carriage member mounted in said receptacle adjacent and parallel to the lower edge of said bottom wall, an actuating member coupled to said carriage member, means guiding said carriage member vertically upwardly responsive to movement of said actuating member, said carriage member having an upwardly facing portion normally aligned with said bottom wall for receiving a toothpick therefrom and elevating it on upward movement of said carriage member, an abutment element within said receptacle spaced above said bottom wall adjacent one side margin thereof and arranged transversely of said carriage member, said receptacle having a top wall formed with a slot parallel to said carriage member and extending adjacent to the other side margin of said bottom wall, a pusher member movably connected to said carriage member and spaced above the top edge of said carriage member by a distance approximately equal to the diameter of the toothpick, and means moving said pusher member in turn responsive to the initial portion of execution of the upward movement of said carriage member toward said bottom wall substantially into vertical alignment with said carriage member to elevate a single toothpick with the carriage member and prevent elevation of the remaining toothpicks and then away from said bottom wall and out of vertical alignment with said carriage member, said carriage member

being spaced inwardly of said transversely extending abutment element to engage one end portion of the toothpick carried by the carriage member with said abutment element and to cause the toothpick to be tilted toward an upright position projecting through said slot responsive to the remaining portion of execution of the upward movement of said carriage member.

3. A toothpick dispenser comprising a receptacle having a sloping bottom wall and adapted to support therein a plurality of toothpicks arranged so that their axes are parallel to each other and transverse of the sloping bottom wall, a vertical carriage member mounted in said receptacle adjacent and parallel to the lower edge of said bottom wall, a lever pivoted to said receptacle, means slidably and pivotally connecting said lever to said carriage member, an actuating member coupled to said lever, means guiding said carriage member vertically upwardly responsive to rotation of said lever, said carriage member having an upwardly facing portion normally aligned with said bottom wall for receiving a toothpick therefrom and elevating it on upward movement of said carriage member, an abutment element within said receptacle spaced above said bottom wall adjacent one side margin thereof and arranged transversely of said carriage member, said receptacle having a top wall formed with a slot parallel to said carriage member and extending adjacent to the other side margin of said bottom wall, a pusher member movably connected to said carriage member and spaced above the top edge of said carriage member by a distance approximately equal to the diameter of the toothpick, means moving said pusher member in turn responsive to the initial portion of execution of the upward movement of said carriage member toward said bottom wall substantially into vertical alignment with said carriage member to elevate a single toothpick with the carriage member and prevent elevation of the remaining toothpicks and then away from said bottom wall and out of vertical alignment with said carriage member, said carriage member being spaced inwardly of said transversely extending abutment element to engage one end portion of a toothpick carried by the carriage member with said abutment element and to cause the toothpick to be tilted toward an upright position projecting through said slot responsive to the remaining portion of execution of the upward movement of said carriage member.

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