

Aug. 17, 1926.

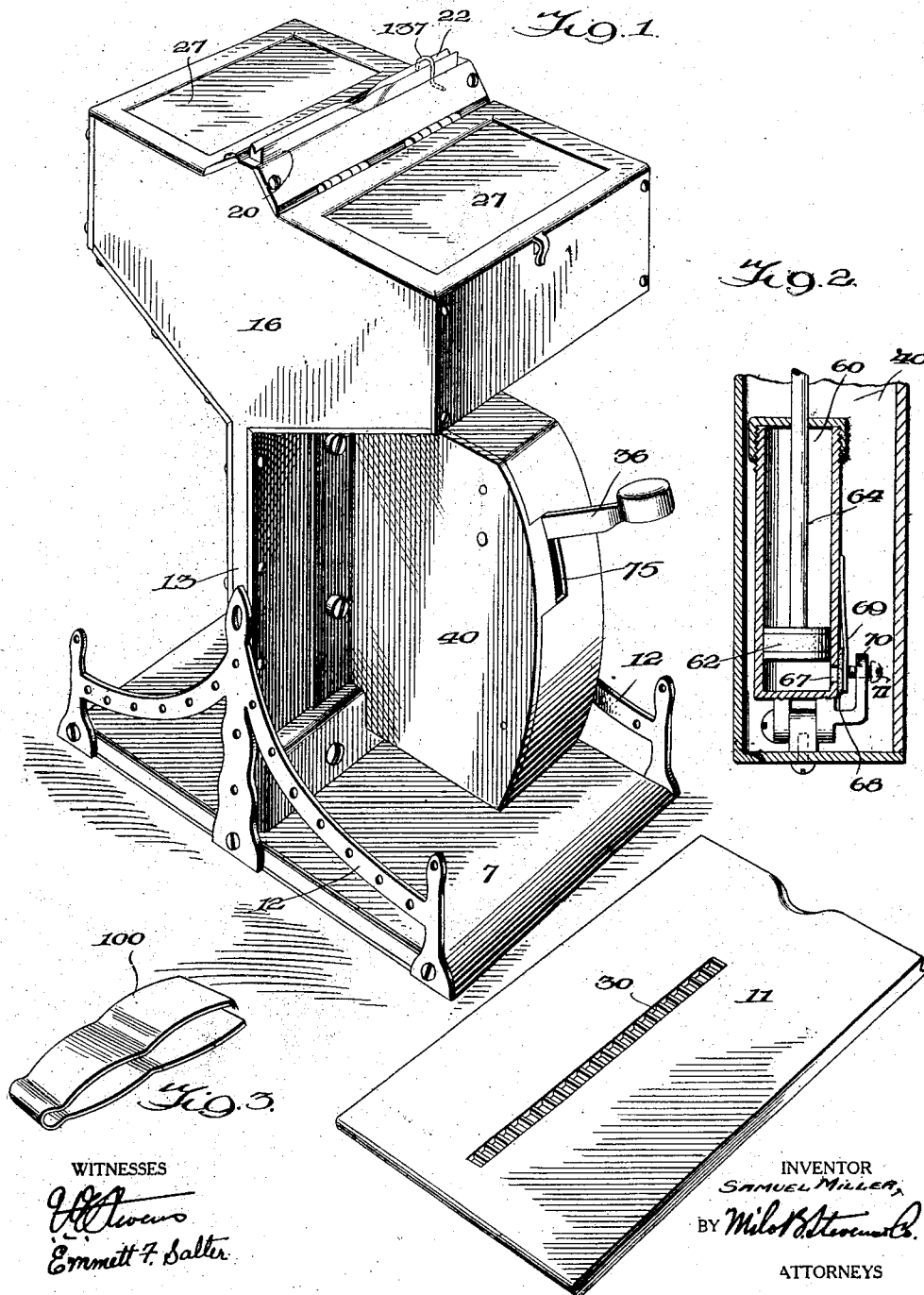
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TOOTHPICK DISPENSER

Filed Dec. 29, 1924

2 Sheets-Sheet 1



WITNESSES
Emmett F. Salter

INVENTOR
SAMUEL MILLER,
BY *Miller & Salter*
ATTORNEYS

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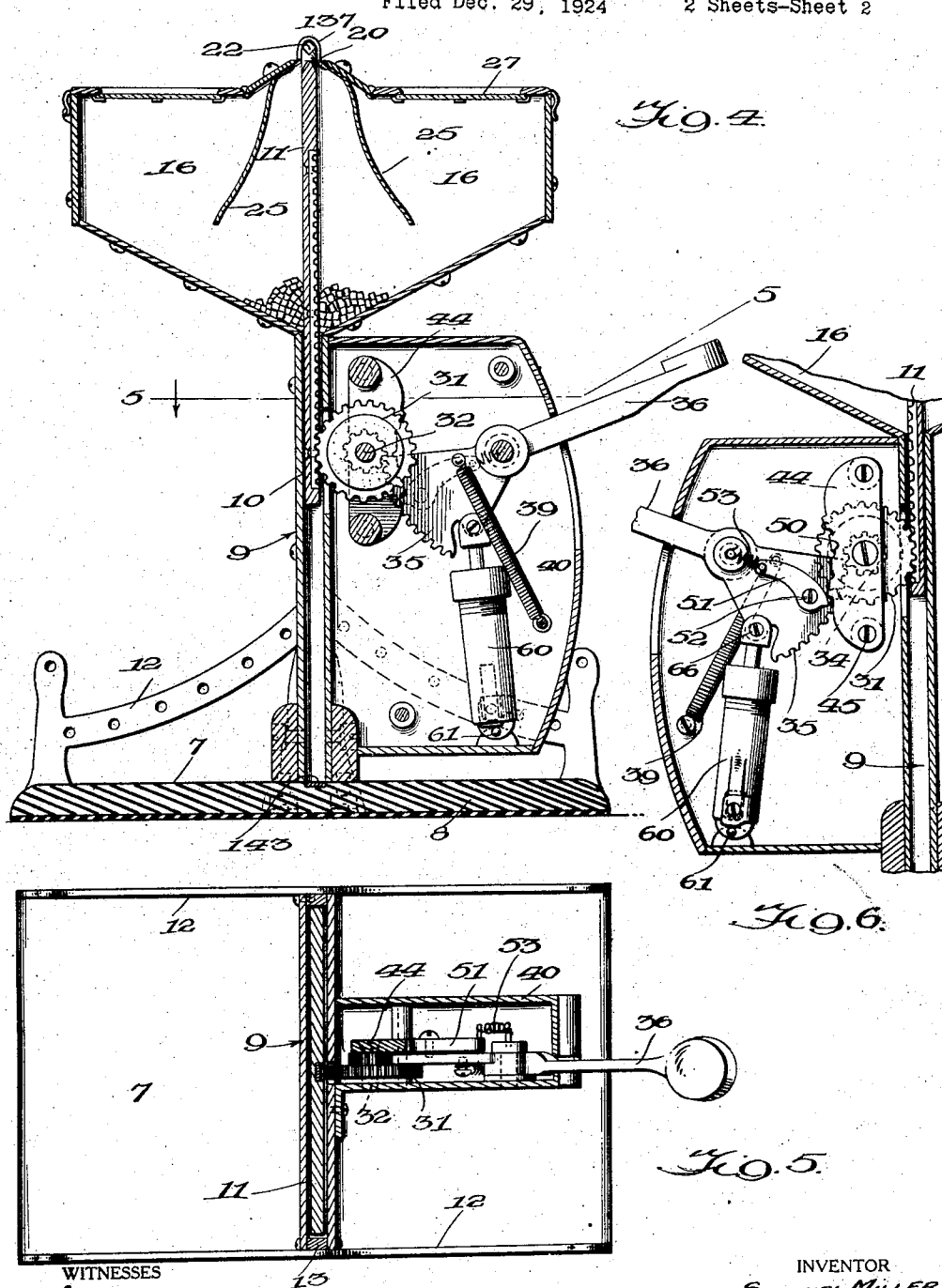
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Emmett F. Salter

INVENTOR
SAMUEL MILLER
BY *Wm. B. Atterwood Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

SAMUEL MILLER, OF CHICAGO, ILLINOIS.

TOOTH PICK DISPENSER.

Application filed December 29, 1924. Serial No. 758,732.

This invention relates to dispensing devices especially adapted for use in connection with toothpicks, and the like.

Briefly stated, an important object of this invention is to provide novel means to singly and separately dispense toothpicks or the like in such a manner that the hands are prevented from coming in contact with the toothpicks or the like which are to remain in the reservoir or magazine of the dispensing device for subsequent use.

A further object of the invention is to provide a dispensing device having simple means whereby the action is cushioned so as to prevent unnecessary noises and to reduce wear and tear on the device to a minimum.

A further object of the invention is to provide a device of the character specified which is of highly simplified construction, durable in use, and cheap to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective of the improved dispensing device;

Fig. 2 is a detail sectional view illustrating a cushioning mechanism embodied in the invention;

Fig. 3 is a perspective of an ejector plate embodied in the invention;

Fig. 4 is a vertical transverse sectional view through the improved dispensing device;

Fig. 5 is a horizontal sectional view taken on line 5—5 of Fig. 4;

Fig. 6 is a detail vertical sectional view illustrating the operating mechanism for the improved dispensing device.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 7 designates a more or less rectangular base having its under side provided with a shallow recess for the reception of a yieldable pad 8 by means of which the device may rest upon a polished or other surface without scratching the same. Of course, the yieldable pad 8 may be secured in place by any suitable means.

As illustrated in Figs. 1 and 4, the intermediate portion of the base 7 is provided

with a combined ejector plate casing and guide and magazine support 9. The combined magazine and ejector plate casing and guide consists of oppositely arranged side walls 10 and end walls 13 to form a guide-way or channel for receiving and guiding the ejector plate 11. Fig. 4 plainly illustrates that the ejector plate 11 is adapted to move up and down in the member 9 and is guided thereby. Suitable bracing members 12 may extend from the corners of the base 7 to the edges or other parts of the combined guide and support 9 to effectively brace and strengthen the same.

The improved dispensing device is provided at the upper end of the member 9 with oppositely located communicating magazines 16 adapted for the reception of toothpicks, matches, or the like, and Fig. 4 plainly shows that the ejector plate 11 is adapted to move up through the magazines to pick up a toothpick and expose the same at the opening 20 at the top of the device.

In carrying out the invention the upper end of the ejector plate 11 is provided with a groove 22 extending for the full length thereof to receive a toothpick, match, or the like, and conduct the same to and through the opening 20. Figs. 1 and 3 illustrate that the intermediate portion of the groove 22 is cut away or that portion of the ejector plate 11 adjacent the middle of the groove 22 may be cut away to allow the fingers to be conveniently engaged with the toothpick or the like.

Fig. 4 plainly illustrates that the oppositely arranged and communicating magazines 16 are provided with downwardly and outwardly curved baffles 25 for preventing an excessive number of toothpicks from crowding about and interfering with the operation of the ejector plate.

The upper sides of the reservoir or magazines 16 are provided with hinged covers 27 which may be swung to open position to allow the magazines to be refilled and it will be seen that the covers 27 are provided with glass panels by means of which the toothpicks or the like may be seen. This permits the operator to replenish the supply of toothpicks or the like at proper intervals.

The ejector plate 11 is provided between the longitudinal edges thereof with a rack 30 adapted to be engaged by the gear 31 mounted on a drive shaft 32. The drive shaft 32 is also provided with a smaller gear

34 adapted to be engaged by a gear segment 35 on the forward end of a lever 36. It will be seen that when the lever 36 is manually depressed the gear segment 35 will be moved upwardly to turn the gears 31 and 34 in a counter-clockwise direction to move the ejector plate 11 downwardly to loading position. When the hand operated lever 36 is released a spring 39 connected to the gear segment 35 and to one wall of the housing 40 returns the ejector plate to discharging position. That is to say, as soon as the lever 36 is released the spring 39 will draw the gear segment 35 downwardly and this will turn the gears 31 and 34 so as to draw the ejector plate to discharging position.

As soon as the ejector plate is released and it starts on its return movement it picks up one of the toothpicks or the like and conveys the same through and to a point above the opening 20 where it may be readily grasped by the fingers.

Particular attention is directed to the fact that this arrangement provides extremely simple and sanitary means for bringing about the individual discharge of the toothpicks.

The shaft 32 is connected to one side wall of the housing 40 and to a bearing member 44, the said bearing member in turn being secured to the housing by screw bolts 45 or other suitable fastening devices.

Fig. 6 illustrates that one edge of the supporting strip or member 44 is provided with a plurality of notches 50 adapted to be engaged by a pawl 51 pivoted as indicated at 52 to the gear segment 35 and actuated by a spring 53. The pawl 51 prevents the accidental return of the gear segment 35 until the same has completed a complete stroke.

The action of the operating mechanism is cushioned by means of an air cylinder 60 pivoted as indicated at 61 to the bottom of the housing 40 and having a piston 62 to which a piston rod 64 is connected. The upper portion of the piston rod 64 is pivoted as indicated at 66 to the gear segment 35 and on the upward movement of the gear segment 35 a quantity of air is drawn slowly into the cylinder 60. On the downward movement of the piston 62 the air in the cylinder is forced out through a port 67 controlled by a valve 68 on the lower portion of a spring 69. Fig. 2 plainly illustrates that a bracket 70 is carried by the cylinder and is provided with a screw bolt 71 adapted to engage the lower portion of the spring 69 and thereby control the valve 68. It will be seen that the cushion member constitutes simple means to retard the movement of the ejector plate 11 so that when the ejector plate reaches the limit of its upward movement it will not come to a sudden halt and throw the toothpick or other article out of place. That is to say, the ejector plate comes

to a more or less gradual halt when it reaches the limit of its upward movement and the toothpick or the like will remain in the groove 22 provided for that purpose. An operator of the improved toothpick dispenser may attempt to rapidly depress the member 36 with more force than is necessary, but the resistance encountered will retard the upward movement of the ejector plate and cause the same to move at a more or less uniform speed. The same is true in connection with the descent of the ejector plate.

The housing 40 is composed of two major sections, one of which consists only of one of the side wall and the bottom wall, while the other section consists of the front wall, the top wall, and the other side wall of the casing. The front wall of the housing is provided with a slot 75 through which the hand operated lever 36 extends and it will be seen that the end walls of the slot 75 limit the movement of the lever 36 so that the gear 35 cannot move out of engagement with the gear 34 either during its up or down movement.

With reference to the foregoing description taken in connection with the accompanying drawings it will be seen that a toothpick dispenser constructed in accordance with this invention is of highly simplified and sanitary construction and may be economically maintained and repaired.

Figures 1 and 4 illustrate that when the ejector 11 reaches the limit of its upward movement it engages an overhanging U-shaped guard 137 of rather fine spring wire which may be soldered or otherwise connected to the upper portion of the toothpick hopper. The guard 137 prevents the toothpick in the groove 22 from being accidentally displaced as the result of the sudden stop of ejector when it reaches the limit of its upward movement. However, the guard spring 137 does not in any way interfere with the manual removal of the toothpick from the groove 22.

The ejector 11 is cushioned at the lower end of its descent by a rubber insert 143.

Figure 3 illustrates a holder 100 of spring metal or the like and by means of which the hopper may be loaded in a sanitary manner.

Having thus described the invention, what is claimed is:

1. A dispensing device comprising a base plate, a combined ejector plate casing and magazine support mounted on said base and extending centrally up from the same a magazine mounted on the upper end of said ejector plate casing and magazine support and extending out from opposite sides of the same, a housing mounted at one side of said ejector plate casing and magazine support, an ejector plate in said casing and hav-

ing teeth, gears arranged in said housing, one of said gears being engaged with said ejector plate, a gear segment engaged with the other of said gears and having a lever extending exteriorly of the housing, a spring to return said gear segment to normal position upon being released, said housing being provided with a slot having its end wall arranged in the path of travel of said lever to limit the movement of said gear segment, and a cushioning member connected to said gear segment and positioned within said housing to cushion the movement of said ejector plate whereby the same is brought to a gradual stop at the end of its movement in each direction.

2. A dispensing device comprising a base plate, a combined ejector plate casing and magazine support mounted on said base and extending centrally up from the same, a magazine mounted on the upper end of said ejector plate casing and magazine support and extending out from opposite sides of the same, a housing mounted at one side of said ejector plate casing and magazine support, a vertically movable ejector plate in said casing and having teeth, gears arranged in said housing, one of said gears being engaged with said ejector plate, a gear segment engaged with the other of said gears and having a lever extending exteriorly of the housing, a spring to return said gear segment to normal position upon being released, said housing being provided with a slot having its end walls arranged

in the path of travel of said lever to limit the movement of said gear segment, and a cushioning member connected to said gear segment and consisting of an air containing cylinder pivoted to said housing and a piston having a rod connected to said gear segment, said cushioning member constituting a means to retard the action of the ejector plate and cause the same to come to a gradual stop at each end of its stroke.

3. A dispensing device comprising a base, a casing extending upwardly from the base, a magazine mounted on the casing, an ejector plate extending through the casing and the magazine and having a groove for the reception of an article to be ejected, said ejector plate being provided with a series of teeth, a gear engaged with said teeth, a second gear having connection with said first-named gear, a gear segment connected to said second-named gear, means supporting said gears, said means being provided with a plurality of notches, a spring actuated pawl adapted for engaging said notches, a lever having connection with said gear segment for operating the same, a cushioning member having connection with said gear segment to retard the movement of said ejector plate and thereby cause the same to approach the limit of its movement at a reduced speed, and a spring having connection with said gear segment to return the same to inoperative position upon being released.

In testimony whereof I affix my signature.

SAMUEL MILLER.