Feb. 8, 1938. E. H. VAIL 2,107,654

CONTAINER OPENING DEVICE AND POURING DEVICE

Filed March 3, 1936 2 Sheets-Sheet 1

Fig. 1.

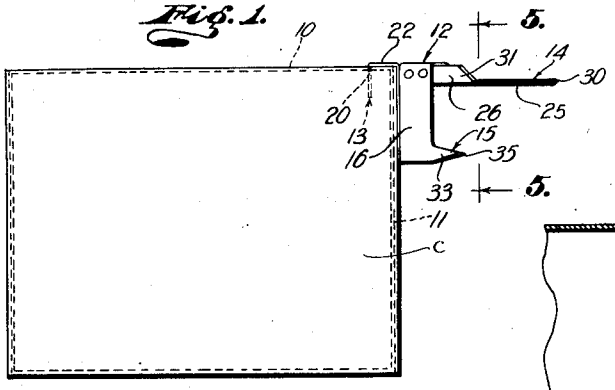


Fig. 2.

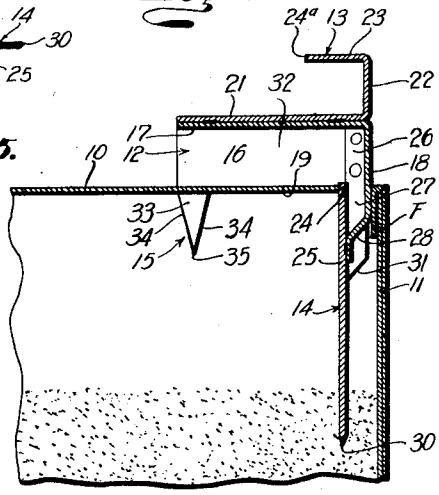


Fig. 3.

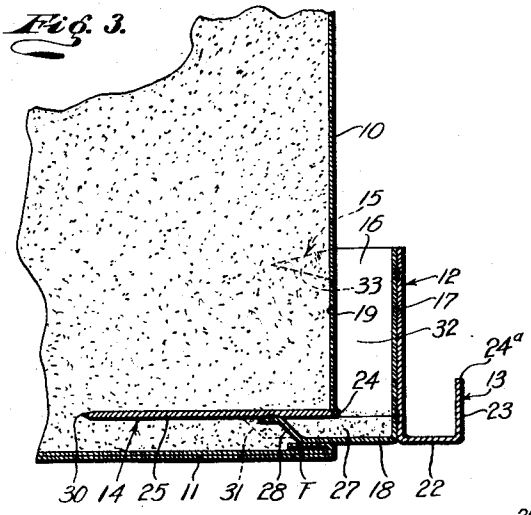


Fig. 4.

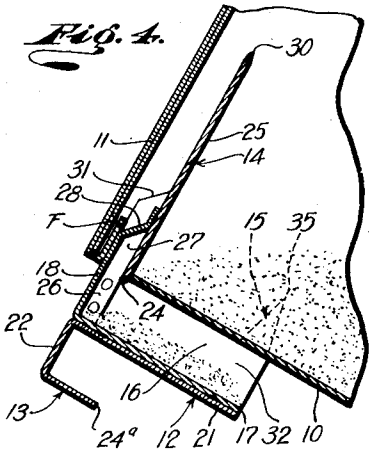


Fig. 5.

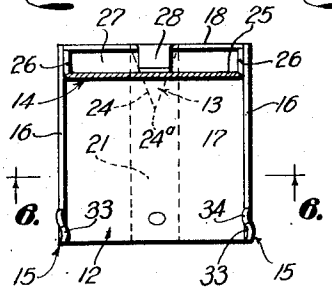
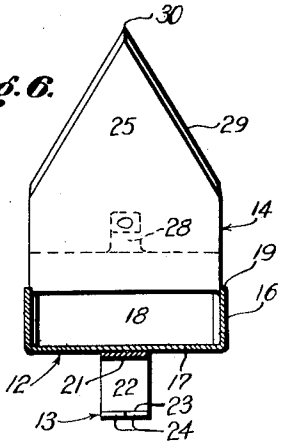


Fig. 6.



Inventor
EDWIN H. VAIL
By
His Attorney

Feb. 8, 1938. E. H. VAIL 2,107,654

CONTAINER OPENING DEVICE AND POURING DEVICE

Filed March 3, 1936 2 Sheets-Sheet 2

Fig. 7.

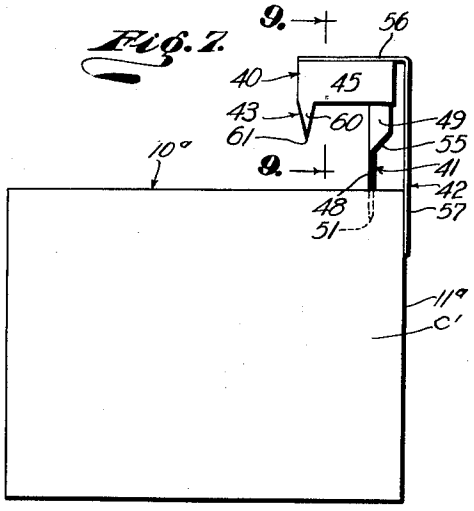


Fig. 8.

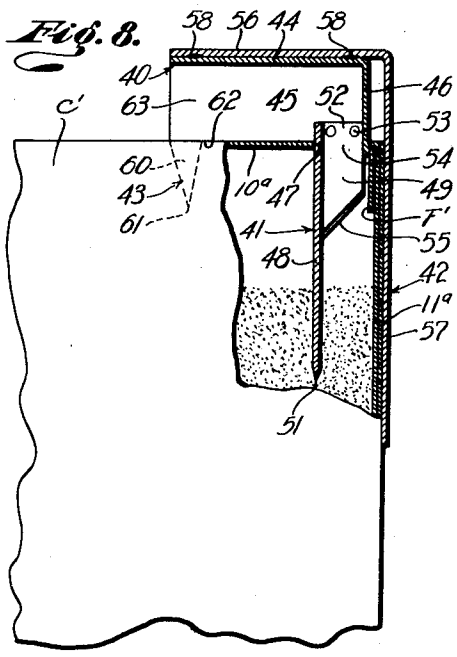


Fig. 9.

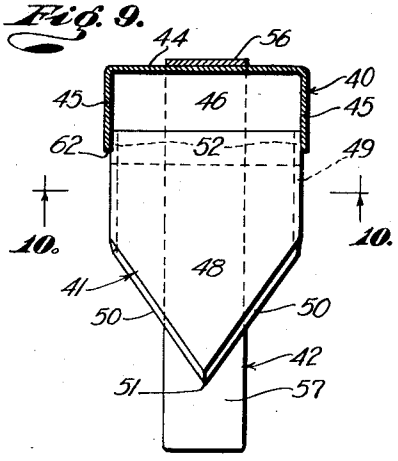


Fig. 10.

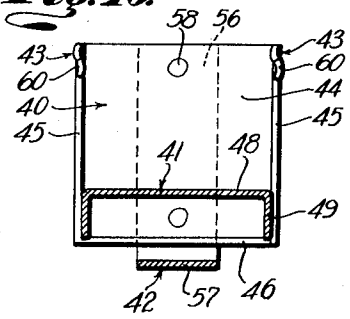


Fig. 11.

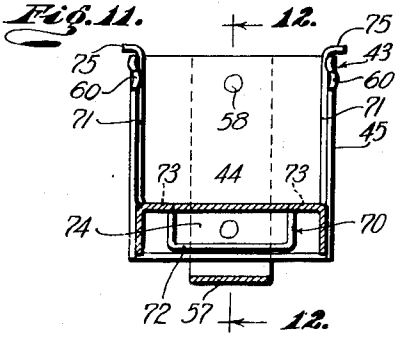
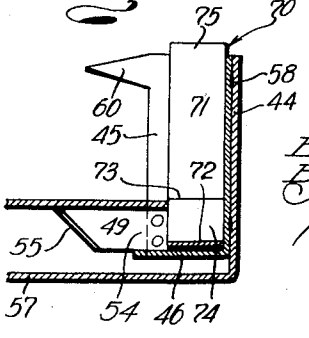


Fig. 12.



Inventor
EDWIN H. VAIL
By
His Attorney

Patented Feb. 8, 1938 2,107,654

UNITED STATES PATENT OFFICE

2,107,654

CONTAINER OPENING DEVICE AND POURING DEVICE

Edwin H. Vail, Los Angeles, Calif.

Application March 3, 1936, Serial No. 66,848

15 Claims. (Cl. 221—98)

This invention relates to a device for use on containers and relates more particularly to a device for opening containers and for facilitating the discharge of the contents therefrom.

A general object of this invention is to provide a simple, practical and effective device for opening containers and for facilitating the discharge of their contents.

Another object of this invention is to provide a device that is operable to open a container and thereafter constitute a convenient spout for discharging the contents therefrom in substantially definite quantities.

Another object of this invention is to provide a container opening device of the character mentioned that is operable to discharge a predetermined or substantially definite quantity of material from the container each time the container is inverted or properly manipulated following the opening operation.

Another object of this invention is to provide a container opening device of the character mentioned that is operable to cut an unobstructed opening in a wall of a container and then form a pouring and measuring spout to control the discharge of the contents from the opening.

Another object of this invention is to provide a container opening device of the character mentioned that remains on the container following the opening operation to form a practical convenient means for facilitating the discharge of its contents in substantially definite or predetermined quantities.

Another object of this invention is to provide a container opening device of the character mentioned that is particularly adapted to open paper and cardboard containers and cartons of the character in which powdered, granulated and flaked products are commonly marketed and that is designed to properly and conveniently discharge such products in controlled or measured quantities.

Another object of this invention is to provide a container opening device and pouring device of the character mentioned that is easy and convenient to operate and use.

Another object of this invention is to provide a container opening device of the character mentioned that embodies a starting cutter or punch that may be employed to form a properly located opening in a wall of a container to receive the entering end of the principal cutter.

Another object of this invention is to provide a container opening device and pouring device that embodies a simple, effective means for dependably removably holding the device on a container to form a spout therefor.

Another object of this invention is to provide a container opening device of the character mentioned that embodies a guide for positioning and guiding the principal cutter to form the discharge opening in the desired location.

Another object of this invention is to provide a container opening device and pouring device of the character mentioned that embodies means for controlling or varying the amount of the material discharged from the container at each dispensing or discharging operation.

The various objects and features of my invention will be fully understood from the following detailed description of typical preferred forms and applications of the invention, throughout which description reference is made to the accompanying drawings, in which:

Fig. 1 is a side elevation of a typical container showing one form of the present invention positioned thereon after having formed a starting opening in a wall of the container. Fig. 2 is an enlarged vertical detailed sectional view of the device illustrated in Fig. 1, showing it on the container after the cutting of the discharge opening. Fig. 3 is a view similar to Fig. 2 showing the container moved to a position where a charge or substantially definite quantity of its contents have poured into the inner passage of the device. Fig. 4 is a view similar to Fig. 2 illustrating the container in a position where the substantially definite quantity of the material is pouring from the outer passage of the device. Fig. 5 is an enlarged vertical detailed sectional view taken substantially as indicated by line 5—5 on Fig. 1. Fig. 6 is a detailed sectional view taken substantially as indicated by line 6—6 on Fig. 5. Fig. 7 is a side elevation view of a typical container illustrating another form of the invention in position thereon with its cutter entering a wall of the container. Fig. 8 is an enlarged fragmentary vertical detailed sectional view showing the device illustrated in Fig. 7 in its final position on the container. Fig. 9 is an enlarged vertical detailed sectional view of the device taken substantially as indicated by line 9—9 on Fig. 7 with the device removed from the container. Fig. 10 is a transverse or horizontal detailed sectional view taken substantially as indicated by line 10—10 on Fig. 9. Fig. 11 is a view similar to Fig. 10 showing a valve element arranged in the device and Fig. 12 is a longitudinal cross sectional view taken substantially as indicated by line 12—12 on Fig. 11.

The present invention is adapted to be employed in forms for use in opening containers of various characters. In the drawings I have illustrated two forms of the invention employed in opening typical containers of the character commonly employed to package powdered, granular and flaked products. It is to be understood that the invention is not to be construed as limited or restricted to the specific forms or applications about to be described but is to be taken as including any features or modifications that may fall within the scope of the claims.

The container illustrated in Figs. 1 to 4, inclusive, of the drawings may be considered a substantially rectangular container formed of paper, cardboard, or other fibrous material. The container shown in Figs. 1 to 4, inclusive, of the drawings includes a wall 10 and a wall 11, as well as its various other walls. The wall 10 is of a single thickness of paper or cardboard while the wall 11 may be of two or more thicknesses, as illustrated.

The embodiment of the present invention illustrated in Figs. 1 to 6, inclusive, of the drawings, includes, generally, a body 12, a cutter or punch 13 on the body 12 adapted to be forced through a wall 10 of the container C, a cutter 14 on the body 12 adapted to enlarge the opening made by the punch 13 to form a discharge opening in the container, and means 15 on the body 12 for removably holding the device on the container C.

The body 12 carries the punch 13, the cutter 14 and the means 15 and is adapted to serve as a pouring spout for the container C. The body 12 may be formed of any suitable or desirable material. In the particular case illustrated in the drawings the body 12 is formed of sheet metal. In the preferred construction the body 12 is substantially U-shaped or channel shaped in transverse cross section having spaced side flanges 16 and a main wall or web 17 extending between and connecting the flanges 16. The flanges 16 are flat and substantially parallel and are at substantially right angles to the flat wall or web 17. The outer face or surface of the web 17 forms a convenient part engageable by the user for forcing the cutter 14 through a wall of the container C as will be hereinafter described. An apron 18 is provided at one end of the wall or web 17. The apron 18 may be an integral continuation of the web 17 and is at substantially right angles to the web and the flanges 16. The apron 18 projects beyond the outer edges 19 of the flanges 16. The body 12 just described may be a simple, inexpensive, one piece element.

The punch 13 is provided to form a starting opening or relatively small opening 20 in a wall of the container C to receive the entering end of the principal cutter 14. The punch 13 is carried by the body 12 so that the body forms a guide for positioning and guiding the punch. In the form of the invention being described the punch 13 is carried by the wall or web 17. The punch 13 may be varied considerably in character without departing from the invention. In the particular case illustrated in the drawings the punch 13 includes a foot or base 21 secured to the wall or web 17 as by welding. A part 22 projects laterally or outwardly from the base 21 in or adjacent the plane of the apron 18 and carries a piercing or cutting part 23. The cutting part 23 of the punch 13 is spaced outwardly from and is substantially parallel with the body web 17. In the simple form of the invention illustrated the punch 13 is an integral part formed of sheet metal or the like. The cutting part 23 of the punch is flat and has side edges 24 converging to a point 24a. The point 24a is spaced a considerable distance from the outer or open end of the body 12. When the punch 13 is to be used the body 12 is positioned with its wall or web 17 against the wall 11 of the container C and the device is pressed or moved to the position illustrated in Fig. 1 of the drawings causing the cutting part 23 to pierce the wall 10. Thus the body web 17 and the foot 21 on the web operate to guide the cutting part 23 to make the starting opening 20 in the wall 10 at a given or definite distance from the container wall 11.

The cutter 14 is adapted to be pressed or forced through a wall of the container C to form a discharge or pouring opening 24. It is preferred to press or force the cutter 14 through a side wall of the container or a container wall formed of one thickness of material or cardboard. The cutter 14 is rigidly secured to the body 12 to project laterally therefrom. The cutter 14 includes a main part 25 and flanges 26 extending along the opposite edges of the main part 25. In practice the cutter 14 may be formed of sheet metal and its main part 25 may be flat. The main part 25 of the cutter 14 lies in a plane at substantially right angles to the plane of the body web 17 and is spaced inwardly from the apron 18. The flanges 26 project from the main cutter part 25 to have their outer edges at or engaging the inner side of the apron 18. The apron 18, the main cutter part 25 and the flanges 26 define or form a substantially rectangular passage 27 for discharging or conveying the contents from the interior of the container C as will be hereinafter described. The flanges 26 may continue inwardly beyond the end of the main cutter part 25 and may be welded or otherwise secured to the body flanges 16 to attach the cutter 14 to the body 12. A reinforcing projection or brace 28 may be provided on the apron 18 and may be welded or otherwise secured to the outer face of the main cutter part 25 to assist in securing the cutter 14 to the body 12 and to lend rigidity to the construction.

The main part 25 of the cutter 14 continues outwardly beyond the flanges 26 and its projecting portion has edges 29 converging outwardly to a point 30. The edges 29 and the point 30 are suitably sharpened to readily enter and cut the container wall. The point 30 of the cutter 14 is adapted to enter the opening 20 or to pierce a wall of the container C and the cutting edges 29 are effective in enlarging the opening entered or started by the point 30. It will be apparent how the pointed and sharpened main cutter part 25 is operable to cut a straight elongate slot. In accordance with the invention the edges 31 of the flanges 26 are inclined and sharpened to make lateral cuts at the opposite ends of the slot formed by the part 25 and to aid in bending back the tab or flap F defined by the slot and cuts. Following the formation of the elongate opening or slot by the main cutter part 25 continued inward pressure on the device brings the sharpened edges 31 in contact with the container wall to make lateral cuts therein and bend the flap F inwardly. The brace 28 is preferably inclined and engages the flap F to assist in bending the flap inwardly. The brace 28 is spaced between the flanges 26 and is located above or outwardly

from the plane of their edges 31 to contact the flap F between its ends after the wall 10 has been cut by the edges 31. This engagement of the brace 28 with the flap is effective in bending the flap inwardly to leave the opening 24 unobstructed. The opening 24 thus formed by the cutter 14 is substantially rectangular and unobstructed. When the device is positioned and used as illustrated in the drawings the opening 24 has its outer side immediately adjacent the wall 11 of the container and the flap F is bent backwardly against or parallel with the wall 11 by the flanges 26.

The edges 19 of the body flanges 16 are adapted to engage the wall 10 of the container C to limit the inward movement of the cutter 14. The body wall or web 17, the flanges 16 and the container wall 10 define a longitudinal opening or passage 32. The outer end of the passage 32 is open and the inner end of the passage 32 communicates with the passage 27. It is important to note that the passages 27 and 32 are angularly related, that is, the passage 32 extends at substantially right angles to the passage 27. The communicating passages 27 and 32 are operable to discharge measured or substantially definite quantities of material from the container C as will be hereinafter described.

The means 15 is provided to releasably or removably hold the device on the container C in the position illustrated in Figs. 2, 3 and 4 of the drawings where the cutter 14 projects through the opening 24 and the flanges 16 bear on the container wall 10. The means 15 includes one or more punches 33 on the body 12 for piercing the wall 10 of the container to hold the body 12 against outward shifting and displacement. In the case illustrated in the drawings there is one punch 33 on each body flange 16. The punches 33 project laterally or inwardly from the edges 19 of the flanges 16 and are preferably provided adjacent the outer ends of the flanges. The punches 33 may be separately formed parts suitably secured to the flanges 16 or may be integral with the flanges 16 as illustrated in the drawings. The punches 33 are pointed, having outwardly converging edges 34 joining at relatively sharp points 35. The punches 33 are preferably twisted or spiralled to be more effective in preventing displacement and undesirable movement of the device with respect to the container C. The thrust or pressure applied to the body 12 to force the cutter 14 through the wall of the container C also forces the punches 33 through the container wall.

In operating or using the form of the invention illustrated in Figs. 1 to 6, inclusive, of the drawings, the device may be held by the user or operator in a position where the base 21 and the body web 17 engage the wall 11 of the container and the punch 13 is spaced above the container wall 10. The device is then moved relative to the container C to force the punch 13 through the container wall 10. It will be noted that the engagement of the base 21 and the web 17 with the container wall 11 locates or positions the punch 13 to form the starting opening 20 a definite distance from the wall 11. Following the cutting of the starting opening 20 the device is moved relative to the container C to disengage the punch 23 from the opening 20. The device is then held or positioned where the point portion of the cutter 14 is entered in the starting opening 20 and the body 12 is spaced above the container wall 10 with its web 17 spaced from and substantially parallel with the container wall 10. A downward or inward pressure is then applied to the device. The body wall or web 17 presents a convenient upper surface against which the user's hand may be pressed to apply the necessary force to the device. The downward or inward pressure on the device forces the cutter 14 into the opening 20 so that its cutting edges 29 enlarge or lengthen the opening. As the downward or inward movement of the device continues the edges 31 of the flanges 26 engage and cut through the wall 10 forming lateral cuts at the opposite ends of the slot made by the main cutter part 25. The edges 31 also bend back the flap F. The continued downward or inward movement of the device relative to the container C also forces the punches 33 through the container wall 10. A simple inward or downward pressure on the device thus forms the discharge opening 24 in the wall 10 and forces the punches 33 through the wall to removably secure the device on the container.

Following the cutting of the opening 24 and the attachment of the device to the container C as above described, the container may be manipulated to discharge substantially definite quantities of its contents through the passages 27 and 32. To discharge a definite amount of the contents from the container C, the container is first moved or swung to a position where its wall 11 faces substantially downward, as shown in Fig. 3. During the movement of the container C from the position shown in Figs. 1 and 2 to the position shown in Fig. 3 a substantially definite quantity of its contents spills or pours onto the passage 27. The container C is then moved to a position where its wall 10 is facing downwardly and is inclined and where the outer end of the pasasge 32 faces downwardly, as shown in Fig. 4. This movement of the container C allows the substantially definite quantity of material that has spilled into the passage 27 to discharge or pour outwardly through the passage 32. If it is desired to obtain additional material from the container C the container may be alternately moved between the positions where the material pours into the passage 27 and discharges from the passage 32. A substantially definite quantity of the contents of the container C is poured into the passage 27 and then discharged through the passage 32 during each complete oscillation or cycle of movement of the container C and the user may readily obtain as much of the contents as needed. The container C may normally rest in the position shown in Fig. 3 and the desired quantities of the contents may be readily obtained by alternately tilting it between this position and the position shown in Fig. 4. It is to be noted that an excessive or unwanted quantity of material cannot spill or be poured from the container when the device is in position on the container. When the container is emptied or when it is desired to remove the device from the container the flanges 16 or the flanges 16 and the apron 18 may be readily grasped and the device detached from the container by withdrawing the cutter 14 and the punches 33 from their respective openings.

The form of the invention illustrated in Figs. 7 to 10 of the drawings comprises, generally, a body 40, a cutter 41 for forming an opening in a wall 10^a of a container C^1, a guide 42 on the body 40 and means 43 for detachably retaining the device on the container C^1.

The body 40 may be identical with the body 12

described above. As shown in the drawings the body 40 comprises a main wall or web 44, flanges 45 extending along the edges of the web 44 and an apron 46 projecting from one end of the web 44. The flanges 45 are at substantially right angles to the web 44 and the flanges 45. The body may be a simple one piece or integral member.

The cutter 41 is provided to form an unobstructed discharge opening 47 in a wall 10a of the container C1. The cutter 41 may be identical with the previously described cutter 14. The cutter 41 includes a flat main part 48 projecting from and disposed at substantially right angles to the body 40 and side parts or flanges 49 on the part 48. The cutter part 48 has sharpened cutting edges 50 converging downwardly or outwardly to a point 51. The cutting edges 50 and the point 51 are suitably sharpened to readily cut through the wall of the container. The cutter 41 is rigidly attached or secured to the body 40. Projecting end portions 52 of the flanges 49 may be secured to the body flanges 45 at 53 by welding or the like. The outer edges of the flanges 49 abut or are adjacent the apron 46 whereby the cutter part 48, the flanges 49 and the apron 46 define a passage 54. The outer ends or edges of the flanges 49 are inclined and sharpened to constitute cutting edges 55. The cutting edges 55 are operable to engage and cut through the wall 10a of the container to make lateral cuts at the ends of the cut formed by the main cutter part 48 and to bend back or inwardly the flap F1 defined by the cuts. The action or operation of the cutter 41 just described is substantially the same as that of the cutter 14.

The guide 42 is provided on the body 40 to guide the cutter 41 to form the discharge opening 47 in the desired location. In the simple form of the invention illustrated, the guide 42 is a substantially L-shaped member having an arm 56 at the outer surface of the body web 44 and a guide arm 57 spaced from and substantially parallel with the apron 46. The arm 56 may be secured to the body wall or web 44 by welding at 58. In practice the arm 46 may extend throughout the length of the body web 44. The guide arm 57 of the guide 42 is a flat part disposed at substantially right angles to the body 40. The guide arm 57 is of substantial length and in practice projects outwardly or downwardly beyond the pointed end of the cutter 41. The guide arm 57 is positioned to engage a second wall 11a of the container C1 to position the cutter 41 a definite distance from the wall 11a and to guide the cutter 41 to form the discharge opening 47 as desired.

The means 43 for removably securing the device to the container C1 may be identical with the above described means 15. In the embodiment of the invention being described the means 43 comprises a punch 60 projecting from the edge 62 of each body flange 45 adjacent the outer end of the flange. The punches 60 have their edges converging to sharpened points 61. The punches 60 are preferably twisted or spiralled to more effectively secure the device to the container C1. When the cutter 41 is forced through the wall 10a of the container C1 the punches 60 are adapted to pierce and enter the wall 10a at points spaced a considerable distance from the openings 47. The edges 62 of the body flanges 45 are adapted to engage the container wall 10a to limit the inward movement of the cutter 41 and the punches 60. When the edges 62 of the body flanges are in engagement with the container wall 10a, the body web 44, the flanges 45 and the container wall 10a define a passage or channel 63 which communicates with and which is at substantially right angles to the passage 54.

In Figs. 11 and 12 of the drawings I have shown an element 70 arranged in the form of the invention illustrated in Figs. 7 to 10, inclusive, of the drawings, which element is operable to control or vary the amount of material discharged from the container C1. The element 70 is optional, that is, it may be employed with or embodied in either one or both forms of the invention or may be removed or omitted, if desired. In the drawings I have shown it embodied in the type of the invention illustrated in Figs. 7 to 10, inclusive, of the drawings, it being understood that it may be used or supplied with either form of the invention.

The element 70 operates to limit the amount of the material discharged from the container C1 during each discharging manipulation or each cycle of movement of the container for discharging its contents. The element 70 is a valve-like part or element and may be formed of a strip or band of sheet metal or the like. The element 70 is substantially U-shaped in plan elevation, having two spaced side parts 71 and a transverse part 72 extending between and connecting the parts 71. The connecting part 72 is stepped or provided with shoulders 73 adjacent its connection with the arms 71 whereby its central or intermediate portion has a pocket or recess 74. Laterally or outwardly projecting fingers 75 are provided at the outer ends of the side parts 71.

In use the element 70 is adapted to be arranged in the body 40 to limit the entrance of material to the body passage 63 from the passage 54. The element 70 is adapted to be arranged with its arms or side parts 71 bearing against the inner sides of the body flanges 45 and with its connecting part 72 adjacent or bearing against the apron 46. When the element 70 is in this position the recess 74 has one side closed by the body web 44 and has its opposite side open to receive material from the passage 54. The mouth of the recess 74 is open to the body channel 63. The fingers 75 are adapted to project at the outer ends of the body flanges 45 to be readily engageable. The fingers 75 may be engaged to spring the parts 71 inwardly to permit shifting or removal of the element 70. The width or size of the recess 74 governs the amount of material that may pass from the passage 54 to the passage 63 during a discharge operation and its size may be varied if desired.

The operation of the form of the invention illustrated in Figs. 7 to 10, inclusive, of the drawings, is similar to the previously described form of the invention. When it is desired to open the container C1 the device is positioned so that the guide arm 57 bears against or engages the wall 11a. The device is then pressed downwardly or moved relative to the container C1 to cause the cutter 41 to engage and pierce the wall 10a. The point 51 is adapted to readily pierce the wall 10a and the cutting edges 50 enlarge or lengthen the cut started by the point 51. The cutting edges 55 come into engagement with the container wall 10a to form lateral cuts at the ends of the slot or cut made by the part 48 and bend back the flap F1 defined by the cuts. The punches 60 engage and pierce the wall 10a to dependably secure the device to the container C1. The edges 62 of the body flanges 45 come into engagement with the wall 10a to limit the inward movement of the cutter 41 and the punches 60. When this occurs the device is in the position illustrated in Fig. 8 of the draw-

ings where the wall 10a, the body web 44 and the body flanges 45 define the channel 63. The container C1 may then be moved or swung to a position where its wall 11a faces substantially downwardly, in which position a substantially definite quantity of material is free to spill into the passage 54 and the inner end of the passage 63. The container C1 is then moved to a position where its wall 10a faces downwardly and is inclined and the open end of the channel or passage 63 faces downwardly. With the container in the last mentioned position the substantially definite quantity of material previously spilled into the passage 54 is free to flow out through the channel or passage 63. The container C1 may be alternately moved between the position where material is free to flow into the passage 54 and the position where the substantially definite quantity of material is free to discharge from the channel 63. In this manner the user may obtain the needed or required quantity of material from the container C1 without danger of the discharge of an excessive amount of material from the container. When the container C1 is empty or when it is desired to remove the device from the container the body flanges 45, or the body flanges 45 and the guide arm 57, may be grasped and the device readily moved relative to the container C1 to disengage the cutter 41 and the punches 60 from their respective openings.

Having described only typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art or fall within the scope of the following claims.

Having described my invention, I claim:

1. A container opening device comprising, a body of channel shaped cross section having a normally open side, a cutter projecting laterally from the open side of the body adapted to be forced through a wall of a container to cut an opening therein and to bring the open side of the body against said wall of the container to be closed thereby, and parts on the body and cutter defining a passage communicating with the interior of the container and body.

2. A container opening device comprising, two parts, one a body having a longitudinal channel open at one side and at one end, the other a cutter on the body projecting at substantially right angles from its open side and at its other end adapted to be forced through a wall of a container to cut an opening therein, the body and cutter being related so that the open side of said channel is closed by said wall when the cutter is forced through said wall, and a member on one of the parts for bending in the material of said wall adjacent the cutter to form a passage extending at an angle to the channel and placing the channel in communication with the interior of the container.

3. A container opening device comprising, a body of U-shaped cross section having a longitudinal channel with an open outer end and an open side, a cutter projecting laterally from the open side of the body channel at the inner end of the body operable to cut an opening in a wall of a container, and a part on the body closing the inner end of the channel and defining a passage having communication with the interior of the container and with said channel for discharging material from the container to the channel.

4. A container opening device comprising, a body having a discharge channel, a cutter projecting substantially laterally from the body operable to cut an opening in a wall of a container, side flanges on the cutter, cutting edges on the flanges operable to make lateral cuts at the ends of said opening, means associated with the cutter operable to bend back the flap thus defined, and a part on the body extending between the flanges closing the adjacent end of the channel, the flanges and said part defining a passage for conducting a limited quantity of the container's contents from the interior of the container to the channel.

5. A container opening device comprising, a body including; a web, and spaced side parts projecting laterally from the web adapted to engage a wall of the container whereby said wall, the web and the side parts define a discharge passage, a cutter projecting laterally from the body adapted to be forced through said wall to cut an opening therein and to bring said side parts in said engagement with said wall, and means associated with the cutter to bend the material of said wall adjacent said opening to place the interior of the container in communication with the inner end of the discharge passage.

6. A container opening device comprising, a body of substantially U-shaped cross section, a cutter projecting laterally from the open side of the body, the body operable to cut an opening in a wall of a container, and means associated with the cutter for bending back the material of the wall at the opening, the body and cutter being related to define a passage communicating with the interior of the container through said opening.

7. A container opening device comprising, a body including, a web, and spaced side parts projecting from the web adapted to engage a wall of the container whereby said wall, the web and the side parts define a discharge passage, a cutter projecting laterally from the body operable to cut an opening in said wall, punches on said side parts operable to enter said wall to assist in retaining the body on the container, and parts associated with the cutter defining a passage communicating with the interior of the container and extending laterally of and communicating with the inner end of the discharge passage.

8. A container opening device comprising, a body having a discharge channel, a cutter projecting substantially laterally from the body operable to cut an opening in a wall of a container, side flanges on the cutter, cutting edges on the flanges operable to enlarge said opening, and a part extending between the flanges whereby the flanges and said part define a passage for conducting a limited quantity of the container's contents from the interior of the container to the channel.

9. A container opening device comprising, a body having a channel, a cutter on the body operable to cut an opening in a wall of a container, parts on the body and cutter defining a passage extending laterally of and communicating with the channel and adapted to communicate with the interior of the container to conduct a limited quantity of its contents to the channel, and a guide on the body spaced from the cutter operable to engage a second wall of the container to guide the cutter.

10. A container opening device comprising, a body having a channel, a cutter on the body operable to cut an opening in a wall of a container,

parts on the body and cutter defining a passage extending laterally of and communicating with the channel and adapted to communicate with the interior of the container to conduct a limited quantity of its contents to the channel, and means on the body for forming an opening in said wall to receive the entering end of the cutter.

11. A container opening device comprising, a body having a channel, a cutter on the body operable to cut an opening in a wall of a container, parts on the body and cutter defining a passage extending laterally of and communicating with the channel and adapted to communicate with the interior of the container to conduct a limited quantity of its contents to the channel, and a punch on the outer side of the body operable to make an opening in said wall to receive the entering end of the cutter.

12. A container opening device comprising, a body having a channel, a cutter on the body operable to cut an opening in a wall of a container, parts on the body and cutter defining a passage extending laterally of and communicating with the channel and adapted to communicate with the interior of the container to conduct a limited quantity of its contents to the channel, and an element limiting communication between the channel and passage.

13. A container opening device comprising, a body having a channel, a cutter on the body operable to cut an opening in a wall of a container, parts on the body and cutter defining a passage extending laterally of and communicating with the channel and adapted to communicate with the interior of the container to conduct a limited quantity of its contents to the channel, and a removable element in the channel limiting communication between the channel and passage.

14. A device for opening cartons including an elongate body of substantially U-shaped cross section having a longitudinal channel with an open side, and a cutter of substantially U-shaped cross section secured to the body to project at substantially right angles from adjacent an end of the body and from the open side of the body channel, the open sides or channels of the body and cutter being in communication.

15. A device for opening cartons including, a one piece body of substantially U-shaped cross section having a longitudinal channel with an open side, and a one piece cutter of substantially U-shaped cross section for piercing a wall of a carton and secured to an end of the body to project at substantially right angles from the open side of the body channel, the open sides of the channels of the U-shaped body and cutter being in communication.

EDWIN H. VAIL.