Sept. 20, 1938. S. BELVEAL 2,130,941

DISPENSING DEVICE

Filed Jan. 14, 1938

Fig. 1.

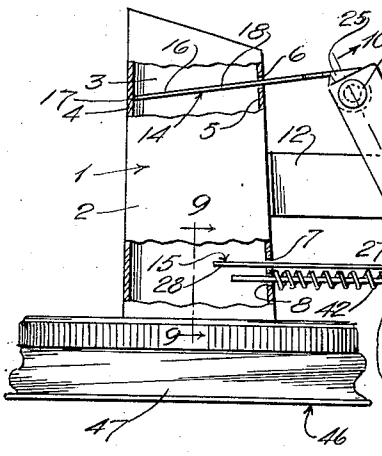


Fig. 10.

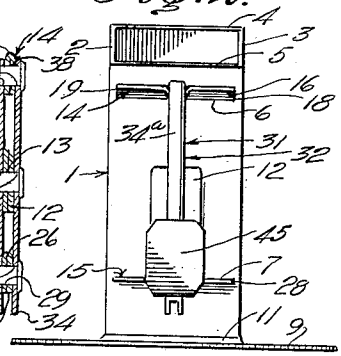


Fig. 2.

Fig. 3.

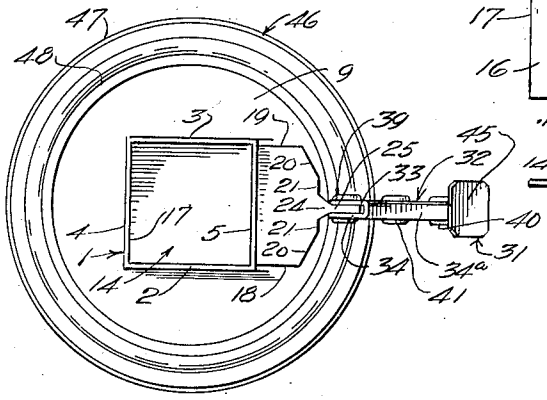


Fig. 4.

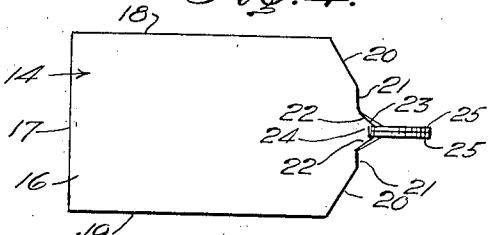


Fig. 5.

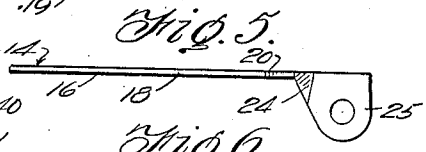


Fig. 6.

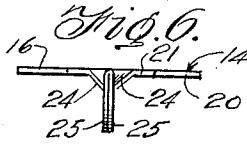


Fig. 7.

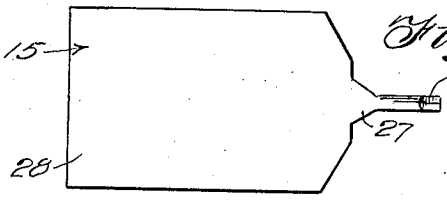


Fig. 8.

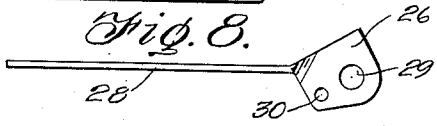
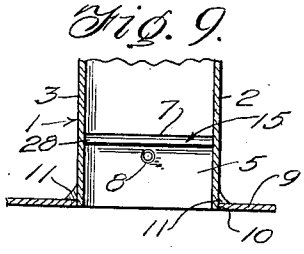


Fig. 9.



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Patented Sept. 20, 1938 2,130,941

UNITED STATES PATENT OFFICE

2,130,941

DISPENSING DEVICE

Sherman Belveal, Delphos, Kans.

Application January 14, 1938, Serial No. 185,053

7 Claims. (Cl. 221—112)

This invention relates to a measuring attachment for containers.

The invention has for its object to provide in a manner as hereinafter set forth, means for attaching to a container for the purpose of dispensing the contents of the latter in measured quantities.

The invention further aims to provide, in a manner as hereinafter set forth, an attachment of the class referred to for automatically dispensing, in measured quantities coffee, flour, baking powder, tea and powdered materials from a container.

The attachment is designed primarily for connection to a container of the jar type having a peripherally threaded neck, but it is to be understood, that an attachment, in accordance with this invention is for use in connection with any form of container for which it may be found applicable.

Further objects of the invention are to provide, in a manner as hereinafter set forth, an attachment of the class referred to which is simple in its construction, strong, durable, compact, readily connected to a container, thoroughly efficient in its use, conveniently operated, and comparatively inexpensive to manufacture.

To the above ends essentially and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be specifically described and illustrated in the accompanying drawing wherein is shown an embodiment of the invention, but it is to be understood that changes, variations, and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is a front elevation of the attachment broken away,

Figure 2 is an elevation looking towards one side of the attachment with the coupling element omitted,

Figure 3 is a top plan view of the attachment,

Figure 4 is a bottom plan view of the measuring slide,

Figure 5 is a view looking towards one of the side edges of the measuring slide,

Figure 6 is a view looking towards the outer end of the measuring slide,

Figure 7 is a top plan view of the cut-off slide,

Figure 8 is a view looking towards one of the side edges of the cut-off slide,

Figure 9 is a section on line 9—9 Figure 1, and

Figure 10 is a section on line 10—10, Figure 1.

The attachment includes an upstanding spout, preferably of rectangular cross sectional contour and formed of a vertical front wall 2, a vertical rear wall 3, a vertical side wall 4 and an inclined side wall 5. The walls 2, 3 gradually decrease in width from their lower to their upper ends. The top edges 6 of the walls 2, 3 incline downwardly from the wall 4 to the wall 5. The walls 4, 5 are of uniform width. The wall 4 is of greater length than wall 5. The latter extends inwardly at an inclination from its lower to its upper end. The manner of setting up the walls of the spout form the latter of tapered contour. The spout 1 preferably will be formed of sheet metal of the desired gauge.

The wall 5 in proximity to its upper end is formed with an upper slot 6 of suitable width and length extending transversely thereof, and between its transverse median and its lower end with a lower slot 7 of suitable width and length extending transversely thereof. The lengthwise median of the wall 5 intersects the slots 6, 7 at their transverse centers. The wall 5 on its lengthwise median and below and in proximity to slot 7 is provided with an opening 8.

The attachment includes a base plate 9 which may be of any suitable contour, preferably circular and is so shown. The plate 9 may be formed of any suitable material preferably sheet metal and is provided centrally thereof with an opening 10 corresponding in contour to the inner end of the spout 1. The latter has its lower end arranged in and snugly engaging the walls of the opening 10 and flush with the inner face of plate 9. The latter is welded to the spout 1, as at 11.

The attachment includes a supporting arm 12 which extends laterally from the wall 5 and is disposed at right angles to spout 1. The arm 12 is disposed on its lower lengthwise edge and has its inner end welded to the outer face of wall 5 on the lengthwise median of the latter between the slots 6, 7. The distance between the upper lengthwise edge of arm 12 and slot 6 is greater than the distance between the lower lengthwise edge of the arm and slot 7. The arm 12 in proximity to its outer end is formed with an opening 13.

The attachment includes a flat upper measuring slide 14 and a flat lower cut-off slide 15. These slides are stamped from sheet metal of the desired gauge. Each slide consists of a single piece of material. The slide 14 includes a substantially rectangular body part 16 having a squared leading edge 17, a pair of squared side edges 18, 19 and a follower edge formed of a pair of oppositely disposed outwardly inclined outer edge portions 20, a pair of horizontal edge portions 21 extending inwardly from the inner ends of the portions 20 and a pair of inwardly inclined edge portions 22 extending from the inner ends of the portions 21 and forming a tapered extension 23. Formed integral with the sides of the extension 23 are depending inversely tapered couplers 24 which merge into a pair of abutting

depending apertured ears 25 flush at their tops with the upper face of body part 16.

The slide 15 is of the same construction as the slide 14 with the exception that the apertured ears 26 of slide 15 are disposed at an upward inclination with respect to the tapered extension 27 of the body part 28 of slide 15 and that each of the ears 26 of the latter are provided with a large and a small aperture 29, 30 respectively. The openings 29 in the ears 26 align. The openings 30 in the ears 26 align. Otherwise than that as stated the slide 15 will be of the same form as slide 14.

The measuring slide 14 passes through the slot 6 into the spout. The cut-off slide 15 passes through the slot 7 in the spout. The slide 14 normally extends through the slot 6 and bears against the inner faces of the spout walls 2, 3 and 4 for closing the spout. The slide 15 is normally in a retracted position and only has a portion thereof extended into the spout. When slide 15 is active it bears against the inner faces of the spout wall 2, 3 and 4 for closing the spout to the container, not shown to which the spout is attached. The normal position of the slides 14, 15 is as shown in Figure 1.

A spring controlled pressure operated structure 31 is provided for simultaneously shifting the slides 14, 15 from their normal position in a manner to move slide 14 to open position and to slide 15 to shut-off position whereby the material from the container, which has been previously poured into the spout against the slide 14, may be dispensed while the slide 15 shuts off the spout to the container. That part of the material poured into the spout and arranged between the slides is the measured quantity of the material which is to be dispensed.

The structure 31 includes an upstanding operating lever 32 formed from a length of sheet metal folded at its longitudinal center to provide a pair of spaced folds 33, 34 and a bend 34a whereby lever 32 in transverse cross section will be of U-form, open at its ends and its inner side. The folds in proximity to one end have aligned openings 35, in proximity to the other end have aligned openings 36 and between the openings 35, 36 have aligned openings 37. Ears 25 of slide 14 depend into the lever 32 from the upper end of the latter and with the apertures 38 thereof aligning with the openings 35. Connected to the lever 32 and extending through the openings 35 and apertures 38 is a means, as indicated at 39 for pivotally connecting lever 32 to slide 14. The ears 26 of slide 15 extend into the lever 32 from the inner side thereof in proximity to its lower end. The openings 30 in ears 26 align with the openings 36. Connected to lever 32 and extending through the aligned openings 26, 36 is a means, as indicated at 40 for pivotally connecting the lever 32 to slide 15. The arm 12 extends into the lever 32 from the inner side of the latter and has its opening 13 align with the openings 37. Extending through the aligned openings 13, 37 and connected to lever 32, is a means, as indicated at 41 providing a pivot for the lever.

The controlling spring for structure 31 is indicated at 42, and which is mounted on a carrier 43 in the form of a horizontal rod having its outer end loosely coupled to the ears 26 by having the outer portion 43 thereof bent to pass through the openings 29 and to overlap one of the ears 26 below the body part 28. The carrier 43 slidably passes through the opening 8 into the spout 1. The spring 42 is of the coiled type, mounted on carrier 43 and it is interposed between the spout and the inner ends of the ears 26. The spring 42 normally tends to maintain the slide 14 in closing relation with respect to the spout, the slide 15 normally partly retracted from the spout, and the lever 32 inclining from its lower to its upper end in a direction towards the spout. Formed integral with the lower portion of the outer face of the bend 34a is a finger piece 45 extending laterally in an opposite direction with respect to lever 32 and providing a broad surface on the lower portion of lever 32 for the application of pressure to the latter against the action of the spring 42.

The attachment includes a coupling element 46 for connecting it to the container with which the attachment is to be used. By way of example the element 46 is of the threaded type for connection to the peripherally threaded neck, not shown of a bottle or jar. The element 46 consists of a circumferentially threaded band 47 formed at its top with an inwardly extending annular flange 48. The element 46 when used is so disposed in relation to the base plate 9 to clamp the latter against the edge of the neck whereby the spout will be coupled in an upstanding position with respect to the container.

When pressure is relieved on lever 32, the slide 14 will be automatically moved in a downwardly inclined path to closing relation with respect to the spout and the slide 15 will be automatically moved in a downwardly inclined path from cut-out relation with respect to the spout, but at an opposite inclination with respect to the path of slide 14. When pressure is applied to the finger piece 45, the slide 14 will be moved in an upwardly inclined path from closing relation with respect to the spout, and the slide 15 will be moved in an upwardly inclined path to cut-off relation with respect to the spout, but at an opposite inclination with respect to the path of slide 14. The structure 31 provides for the slides 14, 15 to simultaneously travel in opposite directions, when slide 14 moves inwardly slide 15 moves outwardly and vice versa.

What I claim is:

1. A dispensing attachment for the purpose set forth, including a spout formed with an outer and an inner slot arranged in spaced alignment, a reciprocatory measuring slide traveling through the outer slot and closing on one direction of its movement the spout and opening the spout on the other direction of its movement, a reciprocatory cut-off slide traveling through the inner slot and closing on one direction of its movement the spout and opening the latter on the other direction of its movement, said spout being formed with an opening inwardly of said inner slot, each of said slides having an extended apertured means centrally of its outer end, a reciprocatory carrier slidably mounted in said opening and extending into the spout, an upstanding lever pivotally supported from said spout, means for pivotally connecting the outer end of the lever to the apertured means on said measuring slide, means for pivotally connecting the lower end of the lever with said apertured means on the cut-off slide, said apertured means on the cut-off slide and said carrier having coacting parts for pivotally connecting the carrier with the cut-off slide, and a controlling spring mounted on the carrier and interposed between the spout and the apertured means on the cut-off slide.

2. A dispensing attachment for the purpose set

forth, including a spout formed with an outer and an inner slot arranged in spaced alignment, a reciprocatory measuring slide traveling through the outer slot and closing on one direction of its movement the spout and opening the spout on the other direction of its movement, a reciprocatory cut-off slide traveling through the inner slot and closing on one direction of its movement the spout and opening the latter on the other direction of its movement, said spout being formed with an opening inwardly of said inner slot, each of said slides having an extended apertured means centrally of its outer end, a reciprocatory carrier slidably mounted in said opening and extending into the spout, an upstanding lever pivotally supported from said spout, means for pivotally connecting the outer end of the lever to the apertured means on said measuring slide, means for pivotally connecting the lower end of the lever with said apertured means on the cut-off slide, said apertured means on the cut-off slide and said carrier having coacting parts for pivotally connecting the carrier with the cut-off slide, and a controlling spring mounted on the carrier and interposed between the spout and the apertured means on the cut-off slide, the apertured means on the measuring slide being horizontally disposed, and the apertured means on the cut-off slide being disposed at an upward inclination.

3. A dispensing attachment for the purpose set forth, including a spout formed with an outer and an inner slot arranged in spaced alignment, a reciprocatory measuring slide traveling through the outer slot and closing on one direction of its movement the spout and opening the spout on the other direction of its movement, a reciprocatory cut-off slide traveling through the inner slot and closing on one direction of its movement the spout and opening the latter on the other direction of its movement, said spout being formed with an opening inwardly of said inner slot, each of said slides having an extended apertured means centrally of its outer end, a reciprocatory carrier slidably mounted in said opening and extending into the spout, an upstanding lever pivotally supported from said spout, means for pivotally connecting the outer end of the lever to the apertured means on said measuring slide, means for pivotally connecting the lower end of the lever with said apertured means on the cut-off slide, said apertured means on the cut-off slide and said carrier having coacting parts for pivotally connecting the carrier with the cut-off slide, and a controlling spring mounted on the carrier and interposed between the spout and the apertured means on the cut-off slide, the said lever being of U-form in transverse section, the apertured means on the said slides extending into said lever, the apertured means on the measuring slide being horizonally disposed, and the apertured means on the cut-off slide being disposed at an upward inclination.

4. A dispensing attachment for the purpose set forth, including a spout formed with an outer and an inner slot arranged in spaced alignment, a reciprocatory measuring slide traveling through the outer slot and closing on one direction of its movement the spout and opening the spout on the other direction of its movement, a reciprocatory cut-off slide traveling through the inner slot and closing on one direction of its movement the spout and opening the latter on the other direction of its movement, said spout being formed with an opening inwardly of said inner slot, each of said slides having an extended apertured means centrally of its outer end, a reciprocatory carrier slidably mounted in said opening and extending into the spout, an upstanding lever pivotally supported from said spout, means for pivotally connecting the outer end of the lever to the apertured means on said measuring slide, means for pivotally connecting the lower end of the lever with said apertured means on the cut-off slide, said apertured means on the cut-off slide and said carrier having coacting parts for pivotally connecting the carrier with the cut-off slide, and a controlling spring mounted on the carrier and interposed between the spout and the apertured means on the cut-off slide, an apertured base plate secured to the inner end of the spout, and means for coupling the base plate to a receptacle.

5. In an attachment for the purpose set forth, a spout, a pair of reciprocatory spaced slides operating simultaneously in alternate directions in oppositely disposed inclined planes, a pressure operated operating lever for and pivotally connected to the outer ends of said slides, said spout being provided with spaced slots for the passage of the slides, means for pivotally supporting said lever from said slides, a reciprocatory carrier operating in unison with said slides, said spout being provided with an opening for the passage of the carrier, said carrier being connected with one of said slides, a controlling spring mounted on the carrier and interposed between the spout and that slide to which the carrier is connected, and an apertured base plate secured to the end of the spout.

6. In an attachment for the purpose set forth, a spout formed with spaced aligned slots and an opening adjacent one of the slots, a pair of reciprocatory spaced slides operating simultaneously in alternate directions through said slots and alternately acting to close the spout, a pressure operated spring controlled operating lever for and pivotally attached at its ends to said slides, said lever being pivotally supported intermediate its ends from said spout, a reciprocatory carrier having its directions of movement corresponding to that and operating in unison with one of said slides, said carrier travelling through said opening and being connected at its outer end to the outer end of said slide, and a coiled spring encompassing the carrier and interposed between the spout and the outer end portion of said slide.

7. In an attachment for the purpose set forth, a spout formed with spaced aligned slots and an opening adjacent one of the slots, a pair of reciprocatory spaced slides operating simultaneously in alternate directions through said slots and alternately acting to close the spout, a pressure operated spring controlled operating lever for and pivotally attached at its ends to said slides, said lever being pivotally supported intermediate its ends from said spout, a reciprocatory carrier having its directions of movement corresponding to that and operating in unison with one of said slides, said carrier travelling through said opening and being connected at its outer end to the outer end of said slide, a coiled spring encompassing the carrier and interposed between the spout and the outer end portion of said slide, and a finger-piece for the application of pressure carried by said lever.

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