Nov. 3, 1931. W. J. GEIST 1,830,056

SPOUT CONSTRUCTION

Filed Oct. 15, 1928

Fig. 1.

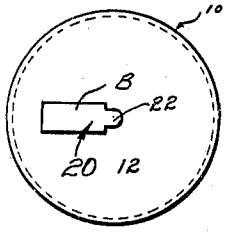



Fig. 2.

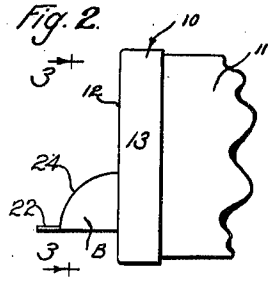



Fig. 3.

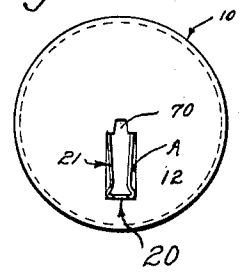



Fig. 4.

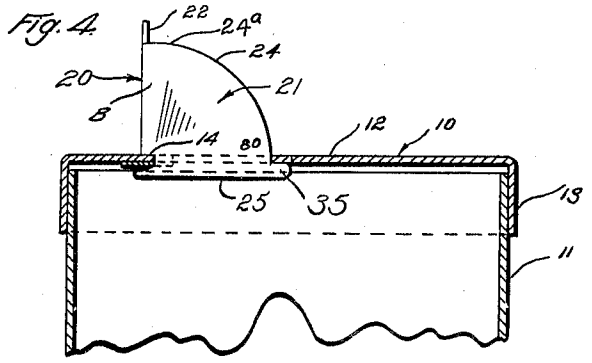



Fig. 5.

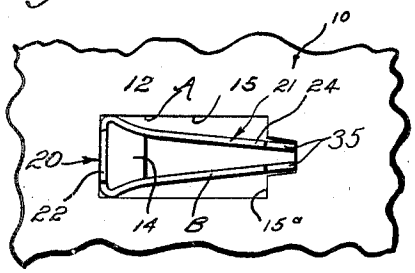



Fig. 6.

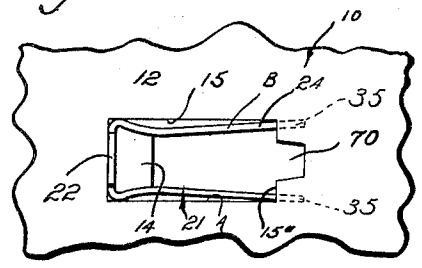



Fig. 7.

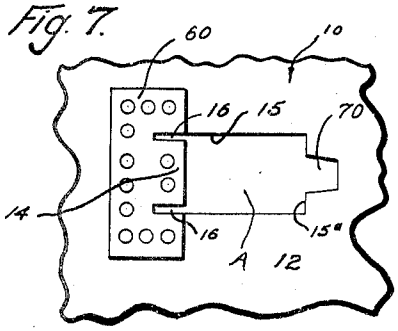
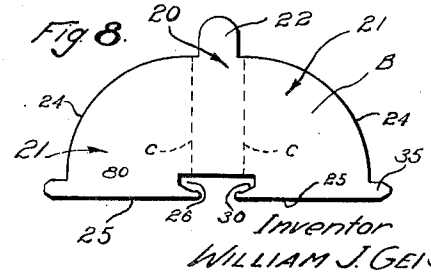



Fig. 8.




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Patented Nov. 3, 1931 1,830,056

# UNITED STATES PATENT OFFICE

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## SPOUT CONSTRUCTION

Application filed October 15, 1928. Serial No. 312,477.

This invention relates to a construction for a spout of the general type commonly used on containers for handling household commodities, or the like, and it is an object of the invention to provide a simplified and improved construction for a device of this character.

Common forms of containers are provided with spouts adapted to fold or collapse when not in use, such devices being ordinarily applied to the tops of the containers and being clipped or otherwise permanently attached to the containers. The constructions ordinarily employed in devices of this character require that the device be applied to the containers before the containers are sealed or completely assembled. Further, the ordinary constructions are more or less expensive in that they require special operations in the course of their application to the containers.

It is an object of the present invention to provide a spout construction which can be easily and quickly applied to a container at any time, that is during the course of manufacture of the container or after the container has been closed or sealed by the usual methods and is ready for handling or shipment.

A particular object of this invention is to provide a spout of the character mentioned in which the resiliency of the material involved is utilized to permit of attaching the spout to the container.

Another object of the invention is to provide a spout construction of such formation as to be capable of being sprung into place or operating position with reference to the container, to be freely operable yet dependably and effectively attached to the container.

Another object of the invention is to provide a spout of the character mentioned that will remain in the open position until deliberately closed.

The various objects and features of my invention will be best and more fully understood from the following detailed description of a typical form and application of the invention, throughout which description I make reference to the accompanying drawings in which:

Fig. 1 is a top plan view of a typical container showing a device of the present invention applied thereto. Fig. 2 is a side elevation of parts shown in Fig. 1 showing the spout in extended or operating position. Fig. 3 is a view taken as indicated by line 3—3 on Fig. 2. Fig. 4 is an enlarged detailed sectional view showing a typical form of spout, embodying the invention, in the open position after it has been applied to the container. Fig. 5 is an enlarged plan view showing the device sprung into position to be passed into engagement with the container. Fig. 6 is a view similar to Fig. 5 showing the device after it has been passed into position with reference to the container and the sprung parts allowed to return to their normal position. Fig. 7 is a plan view of the part of the container to which the device is applied being a view showing the configuration of the opening provided in the container for the reception of the spout. Fig. 8 is a view showing a blank from which the spout is formed.

Certain features of construction which are employed in the device set forth in this application are set forth and claimed in my co-pending application entitled Spout for a container, or the like, filed on even date herewith. I will, for purpose of facilitating a full understanding of the present invention, describe features which are not claimed in this application but which are the subject of the said co-pending application.

The spout construction provided by this invention is applicable to devices of various kinds being particularly applicable to containers such as are commonly used in handling various household commodities or merchandise. It is to be understood that my invention resides primarily in the spout and the portion of the container to which it is applied and is in no way concerned with material to be handled in the container or other features or details of the container. For purpose of example I have illustrated a simple form of container 10 having a cylindrical side wall 11 and a flat end or top wall 12. The top wall 12 is joined to the side wall 11 by a suitable flange 13. The various parts of the container may be separable or they may be permanently assembled, it being a feature of the inven-

tion that the spout may be applied to the container at any time during the course of its manufacture or after it has been completely and permanently assembled. It is to be understood that the invention can be applied to containers of various sizes and shapes, it being preferred to apply it to a flat part such, for example, as the wall 12.

For the purpose of the present invention, the wall 12 of the container is provided with a rectangular opening A for the reception of the spout B. The shape, size and proportioning of the opening is obviously dependent more or less upon the spout to be applied to it, it being understood that the opening may be varied widely and still embody the principles of the invention. The particular opening construction provided by the present invention has a projection or tongue 14 projecting into the opening from what is the hinge end of the opening when the spout is applied thereto. The tongue is spaced from the side edges 15 of the opening forming notches 16 for the reception of the sides of the spout, as will be hereinafter described. In the particular form of the invention illustrated in the drawings the other end $15^a$ of the opening A is provided with a notch 70.

The spout B is, in accordance with the present invention, formed of a material having a certain degree of elasticity it being convenient to form it of metal or certain grades of paper which permit of the parts being sprung, as will be hereinafter described. The spout comprises, generally, a bottom part 20 and two spaced substantially parallel side parts 21. The bottom 20 may be of substantially the same configuration as the opening A it being preferred that it be such as to form a closure for the opening when the spout is folded or in the collapsed position as shown in Fig. 1 of the drawings. In the drawings I have shown the bottom 20 corresponding in width to the opening A and sufficiently long to extend between the ends of the opening. It will be obvious that the tongue 14 operates to prevent passage of the bottom 20 through the opening when the spout is in closed position. Further, a tab or extension 22 is preferably provided on the outer or swinging end of the bottom 20 to overlie the top wall 12 of the container at the edge $15^a$ and to close the notch 70 when the spout is in closed position.

The sides 21 of the spout join and project from the side edges of the bottom 20. The sides are preferably integral with the bottom in which case the entire spout may be formed from a single sheet of material bent along lines C so that the sides 21 project from the bottom 20, as shown throughout the drawings. Each side 21 is segmental in form having an outer curved edge 24, a straight end edge joining the bottom and a straight end edge 25 extending from the curved outer edge to join the edge which connects with the bottom. The side is joined with the bottom so that it projects somewhat beyond the inner or hinged end of the bottom. A notch 26 is provided in the part of said edge which projects beyond the bottom 20. When the device is in place in connection with the wall of the container each of the sides 21 at the inner or hinge portion of the spout extends into one of the notches 16 formed by the tongue 14, while a part of the container wall at the inner end of the notch 16 projects into the notch 26 in the spout. The tongue 14 projects between the sides 21 keeping them apart and in proper position. In order that this connection or engagement be such as to allow for pivotal movement of the spout between a position where the bottom of the spout closes the opening A and a position where the spout projects from the container to facilitate pouring the material from the container, one side 30 of each notch is cut or bevelled away, as clearly illustrated in Fig. 8 of the drawings.

The side parts of the spout and the wall of the container are held in the cooperating relationship described in the preceding paragraph through the bearing of the curved outer edges 24 of the sides on the end $15^a$ of the opening opposite the notches 16. The curved edges 24 are curved about points at or near the bottom portions of the notches 26 so that the proper engagement between the edges 24 and the edge $15^a$ is maintained throughout operation of the spout.

It is preferred to proportion the spout so that the edges 24 engage or very nearly engage the edge $15^a$ of the opening 15. In accordance with the preferred form of the invention the edges 24 are each provided with a straight portion or a cam portion $24^a$ adjacent the base of the tab 22. The straight portions $24^a$ are provided to frictionally engage the edge $15^a$, when the spout is operated to the closed position and act to hold the spout closed until deliberately operated. If the container is formed of paper, or the like, the straight portions of the edges 24 cut into the edge $15^a$. The straight portions $24^a$ of the edge 24 provide a frictional engagement between the spout and the container.

In accordance with the present invention either one or both of the sides 21 are provided with stop projections 35 on the outer edge 24 adjacent the end edge 25.

It is through the action of the stops that the spout is prevented from being swung outwardly to disengage the sides 21 from the opening and it is through operation or movement of the stops 35 that the spout is inserted into operating position in the opening A. In the form of the invention illustrated, the stops 35 project substantially radially outward from the edges 24 at the lower edges of the two sides 21 to project under the wall 12 of the container when the spout is applied to the container as shown in Fig. 6. The move-

ment of the stops required to allow their being passed through the opening A from the outer side of the wall 12 to the inner side is allowed by the sides 21, the sides 21 being sufficiently flexible so that they can be sprung inwardly in a manner such as I have shown in Fig. 5 allowing the stops to be passed through the notch 70 as will be apparent from examination of Fig. 5. It will be apparent that the sides 21, being held rigid only along the line of contact with the bottom 20, are freely sprung together, as shown in Fig. 5, to allow latching of the stops 35 under the wall 12. Upon releasing of the sides 21 after the stops have been passed through the notch 70 they spring outwardly to their normal positions illustrated in Fig. 6.

In the preferred form of the invention the sides 21 of the spout may be shaped or proportioned so that they normally bear outwardly against the sides 15 of the opening A to maintain a suitable amount of friction between the spout and the container. This is desirable as it is convenient to have the spout such as to stay in a position to which it may be moved. In the drawings I have shown the portions 80 of the sides adjacent the edges 25 somewhat wider apart than the other parts of the sides so that the sides 21 of the spout bear with considerable pressure on the sides 15 of the opening when the spout is in open position. This formation of the sides 21 causes the spout to remain in the open position unless deliberately operated therefrom.

If the wall 12 of the container is formed of paper, or the like, a reinforcing plate 60 may be applied to the wall at the opening A.

From the foregoing description it will be apparent that I have provided an improved arrangement in the formation of parts whereby a spout can be very easily and quickly applied to a container. The operation required to apply the spout to or remove it from a container is very simple and in practice can be performed regardless of the state of the container, that is regardless of whether or not the container is filled or is wholly or partially assembled. It will also be apparent that by forming the spout of a material having a suitable degree of elasticity it is dependably secured to the container upon once being applied thereto. In practice the springer resiliency of the material may be such that it requires deliberate operation to remove the spout from the container after it has once been applied.

Having described only a typical preferred form of my invention, I do not wish to limit myself to the specific details set forth, but wish to reserve to myself any changes or variations 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 spout for a container having an opening with a notch in one edge including, a bottom, sides projecting from the bottom to extend into the opening, and a stop projection on one of the sides, the said side being resilient and adapted to be sprung to position to pass the stop through the notch.

2. A spout for a container having an opening with a notch in one edge including, a bottom, sides projecting from the bottom to extend into the opening, and stop projections on the sides to be passed through the notch into the opening only when the sides are sprung inwardly toward each other.

3. A spout for a container having an opening including, a bottom, sides projecting from the bottom to extend into the opening, each side having a curved outer edge and an end edge substantially perpendicular to the bottom and joining the end edge, the curved edge having a straight portion to frictionally engage a side of the opening, and a stop projecting from one side at the point of connection between the said edges.

4. A spout for a container having an opening including, a bottom, sides projecting from the bottom to extend into the opening, each side having a curved outer edge and an end edge substantially perpendicular to the bottom and joining the end edge, there being straight portions on the curved edges adapted to frictionally engage a side of the opening, and stops on the sides at the points of connection between said edges adapted to be passed through the opening only when the sides are sprung inwardly toward each other.

5. A spout for a container having an opening with a notch in one edge including, a bottom, sides projecting from the bottom to extend into the opening, and a stop projection on one of the sides, the said side being resilient and adapted to be sprung to position to pass the stop through the notch, the sides of the spout normally bearing outwardly against the sides of the opening.

6. In combination a container wall having an opening with a notch in one edge and a spout to be arranged at the opening and having a resilient part having a stop to be sprung into the opening through the notch, said stop being adapted to limit outward movement of the spout in the opening.

In witness that I claim the foregoing I have hereunto subscribed my name this 5th day of September 1928.

WILLIAM J. GEIST.