Jan. 21, 1936. J. H. ADAMS 2,028,309

SPRING CLOSING DEVICE

Filed Feb. 17, 1932

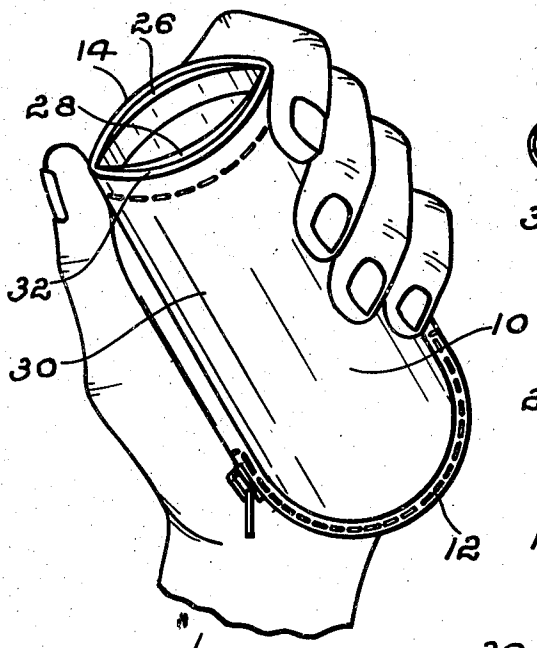


Fig. 1

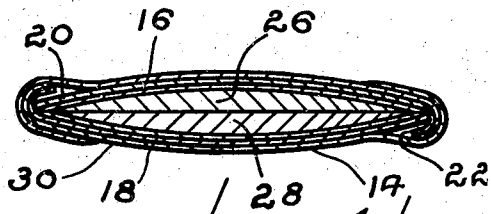


Fig. 4

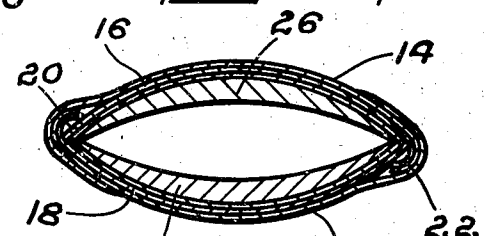


Fig. 5

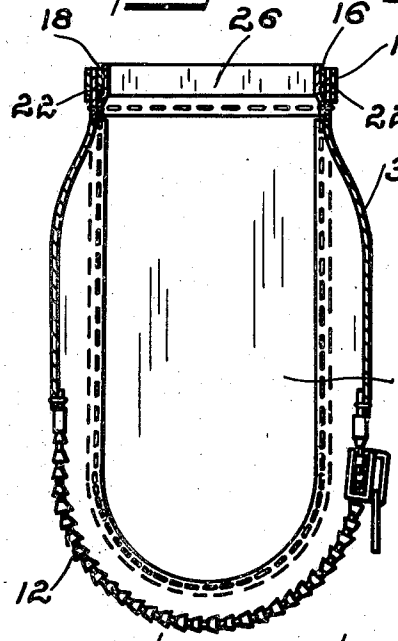


Fig. 2

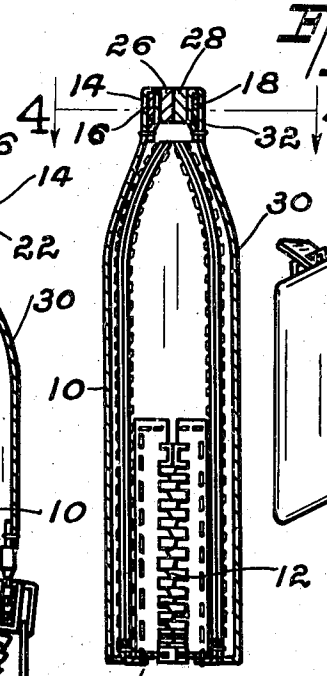


Fig. 3

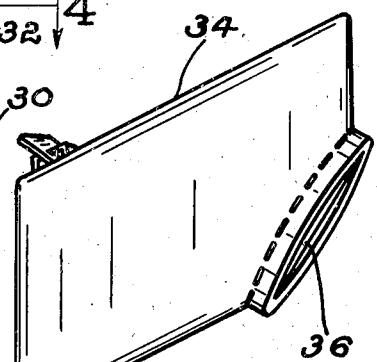


Fig. 6

INVENTOR

John H. Adams

BY

Smith & Tuck

ATTORNEYS

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SPRING CLOSING DEVICE

John H. Adams, Seattle, Wash.

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5 Claims. (Cl. 150—10)

My invention relates to the art of bag closing devices and more particularly to a spring closing device.

There are many uses for a closure device which will permit the dispensing of materials, and which when released will automatically close the dispensing device. As a matter of simplicity in description, I prefer to refer to my closing device as applied to a tobacco pouch. However, I wish it to be understood that this application is only one of the various uses that will suggest themselves for the employment of my device.

Many forms of closures are used on dispensing chutes, bags, pouches, and the like, which require the manual operation of a hooked fastener or snapped buttons, draw strings and the like. Almost invariably such closures require the use of both hands of the operator. In my present device I provide means that can be conveniently operated by only one hand. This is of considerable importance in many fields of industry. Particularly where it is desired to dispense granular articles and still it is desired to support the vessel into which the granular material is being drawn. This is particularly true of tobacco pouches when used in the rolling of cigarettes, filling of pipes, etc. It is to provide a device of this character that I have provided my present construction.

The principal object of my invention is to provide means whereby a closure device may be entirely operated by one hand of the operator.

A further object is to provide cheap and durable means for providing such a closure.

A further object is to provide a closure of this character that can be easily installed in the minimum of space.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawing, wherein

Figure 1 is a perspective view showing a tobacco pouch employing my closure means, and the same being shown in its open position.

Figure 2 is a cross sectional view through this tobacco pouch.

Figure 3 is a cross sectional view taken in a plane normal to that of Figure 2.

Figure 4 is a cross sectional view taken along the lines 4—4 of Figure 3.

Figure 5 is a similar view but showing the dispensing opening as extended.

Figure 6 shows another installation arrangement of my device.

Referring to the drawing, throughout which like reference characters indicate like parts, 10 designates any flexible container, or as I have illustrated throughout my various views, the body portion of a tobacco pouch. This I have shown as closed at the lower end by a hooked fastener as 12. In a tobacco pouch this forms a very convenient filling opening.

At the opposite end of my pouch I form a closure which consists of a slightly reduced neck portion 14 in which are disposed two similar and co-acting spring members 16 and 18. These members are constructed of spring steel preferably, and have one straight cut end as 20, and at their opposite end have a curved portion 22. Each spring being of identical construction, will when placed in position for use as illustrated in Figures 4 and 5, provide an arrangement whereby the square cut end of each spring rests within the curve of the other spring member. The interlocking arrangement of the two springs is such that when the springs are compressed by pressure applied, as indicated in Figure 1, tends to cause the two spring members to go outwardly away from each other, and provide the opening as indicated in Figures 1 and 5.

It has been found that in order to have the two springs working smoothly there must be some appreciable clearance within the bow portion. This makes it possible for the square cut ends of the spring to travel around the curve of the bow members, somewhat, and thus provide the smooth action so much desired in this type of equipment. The looseness, however, of the square cut end of the spring within the bow portion, would provide a point of leakage which would permit the materials retained to be sifted out. This, of course, would be very objectionable. It has further been found that it is desirable to slightly bow the two spring members so as to make certain that the two springs will bow in opposite directions and not together. The curved portions of the bow have the property of throwing out each of the bow members so that if pressure is applied with anything like evenness on the two end portions, the springs will go outwardly from each other, but when a device of this character is put into commercial use, most unusual things are often expected of it, and it is to make more certain of the proper springing of the bow members, that I provide filling pieces or members as 26 and 28, which are secured within the mouth of the pouch, usually by gluing thereto. These pieces serve the dual capacity of preventing any leakage through the closure when the pressure is released thereon, and when the mechanism is in the position as shown in Figure 4, and they place

an initial bowing in the spring members as explained.

When my spring closure is used in a tobacco pouch, for instance, the side walls **30** are normally made of light flexible material, some of the soft tanned leathers, or other flexible fabrics being most suitable. This side wall material is preferably brought up and over the springs after the manner shown in Figure 3 at **32**. This makes for neatness, and pleasing finish.

I have shown my closing device as applied to a tobacco pouch, or it might be a pipe case and a tobacco pouch, combined. This construction might be had with a zipper opening, for instance, along the margin **34** and provided with one of my closing devices at the opposite side as shown, for instance, at **36** in Figure 6.

Method of operation

It has been found most convenient when using my device as a tobacco pouch, for instance, to provide means as at **12** for charging the pouch. In case of canned tobacco, it is quite often desirable to put the paper can liner, and all into the pouch. This prevents any spilling and makes for quick charging of the device. When it is desired to fill a cigarette or pipe, the pouch is grasped after the fashion of Figure 1. The two ends at **20** and **22** are pressed together thus expanding the opening after the showing of Figures 1 and 5, and the tobacco can then be easily dispensed.

When the user is through filling his pipe or cigarette, the pressure is released, and the closure seats itself, as shown in Figure 4. Sometimes it has been found, for instance, that granules of tobacco may become lodged between members **26** and **28**. In this case it is only necessary to hold the pouch, with the mouth end open upwardly, and then to flex the closure a couple of times and the granules will drop and leave the engaging surfaces of members **26** and **28** clean, so that a firm closure is made.

While, for sake of completeness, I have described my closure in its connection with a tobacco pouch, this is only because a tobacco pouch, for instance, provides a very useful carrier for my device. It is desired to bring out, however, this form of closure can be used at the discharge end of chutes of various characters, and for the dispensing of various commodities, particularly grains, cereals, and the like.

The foregoing description and the accompanying drawing are believed to clearly disclose a preferred embodiment of my invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The combination with a flexible container, of a closure therefor comprising a pair of bowed springs secured around the mouth of the container, each said spring having a hooked end overlapping a plane end of the other spring, and complementary filling pieces attached to adjoining faces of said springs.

2. The combination with a flexible container, of a closure therefor comprising a pair of bowed springs secured around the mouth of the container, each spring having an end flange forming a hook overlapping a plane end of the other spring, and complementary filler pieces conforming to the shape of and attached to the adjoining faces of the springs.

3. The combination with a flexible container, of a closure therefor comprising a pair of bowed springs secured around the mouth of the container, co-acting means at the opposite ends of said springs for retaining the ends in joined relation, and complementary filling pieces attached to adjoining faces of said springs.

4. The combination with a flexible container, of a closure therefor comprising a pair of bowed springs secured around the mouth of the container, co-acting means at the opposite ends of said springs for retaining the ends in joined relation, and tapered filling pieces supported from adjoining faces of said springs.

5. The combination with a flexible container of a closure therefor comprising spring means having a pair of oppositely bowed portions arranged completely around the mouth of the container, and complementary filling means attached to and lying between opposed faces of the portions to retain the springs in outwardly bowed form.

JOHN H. ADAMS.