Oct. 29, 1957 E. C. SWANSON 2,811,299

SACK CLOSURE AND OPENING DEVICE

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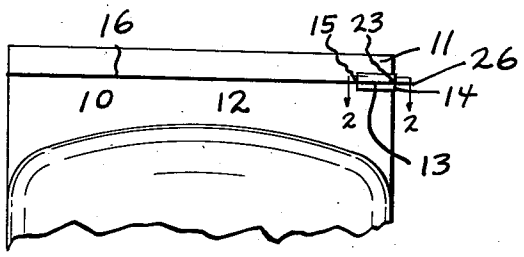


Fig. 1

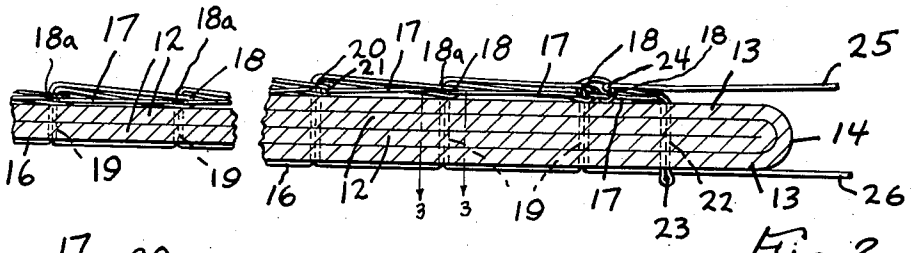


Fig. 2

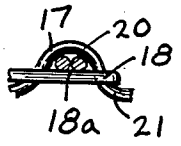


Fig. 3

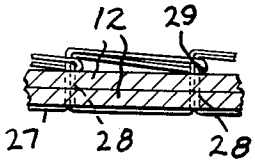
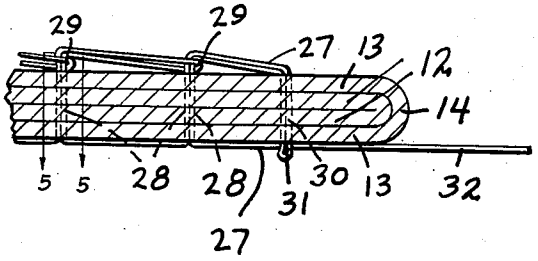


Fig. 4



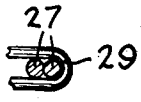


Fig. 5

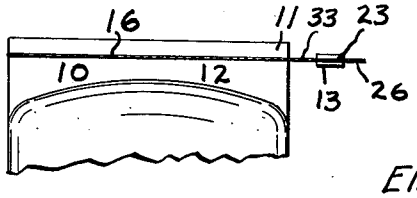


Fig. 6

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SACK CLOSURE AND OPENING DEVICE

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2 Claims. (Cl. 229—62)

My invention pertains to a device or arrangement for closing and opening bags.

An object of my invention is to provide a device which allows convenient and rapid opening of the upper end of the sack containing flour, or any other substance.

A further object of my invention is to provide an extra closure member at the sack end, which closure is of suitable material so that it will grip or frictionally engage the sack opening threads to retain the same.

A further object of my invention is to provide in association with the closure member, a certain type of stitching, or similar operation so that the extremities of the threads will be additionally frictionally retained, to provide means for the prevention of unraveling of the stitching itself, and to provide the same with double or single stitching arrangements.

A further object of my invention is to provide the aforementioned arrangements which will involve the use of simple manufacturing operations.

With these and other objects in view, my invention consists in the construction, arrangement, and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the top of a sack employing my arrangement,

Figure 2 is a sectional enlarged detail view taken along the lines 2—2 of Figure 1,

Figure 3 is a sectional detail taken along the lines 3—3 of Figure 2,

Figure 4 is a sectional detail similar to Figure 2 showing the single thread arrangement,

Figure 5 is a sectional detail taken along the lines 5—5 of Figure 4, and

Figure 6 is a side elevation of the top of a sack, and showing a modified form.

I have used the character 10 to designate the top of a sack made of fabric or any other material and the character 11 the upper corner of the sack, and the character 12 designating the plies of the sack.

Secured about the edge 11 of the sack is a plastic or any other resilient type of strip 13 which is bent about the edge of the sack at 14 thereby providing a portion at each side of the plies 12. The member 13 terminates at 15.

In first describing the use of my arrangement, I shall set forth the use of the resilient member in combination with the usual two thread stitching. This stitching is shown in Figures 2 and 3, in a greatly enlarged scale to show it more clearly, and in this type of stitching, I shall use the character 16 to designate one of the threads and the character 17 the other thread. It will be noted that the thread 16 originates and continues principally along one side of the sack with certain loops 18, however, passing to the other side of the sack through openings 19, whereas the thread 17 remains on the other side of the sack at all times with the exception of when it passes

through the resilient or plastic closure strip for locking the same.

The string 17 looped passes through the loop 18 and about loop 18a at 20 (see Figure 3) and thence string 17 bends around the extremities of the loop at 21, continuing as described to the next loop extremity and so on as shown in both Figures 2 and 3.

At a certain point beyond the opening 19 of the end loop 18 as close as suitable to the said opening in member 13 to the right of Figure 2 the string 17 closely drawn passes downwardly not too near the end of member 13 through a tightly restricted opening 22, is looped over at 23 a slight distance beyond the member 13 and then returns through the same opening 22 and returns backwardly closely drawn through the loop 18 at 24, and then continues outwardly into the extending portion 25. The end loop 18 is tightly drawn to retain the string within the same. The string of the end loop 18 reverses and passes back through the opening 19, with the string 16, which is a continuation thereof, passing outwardly into the extending portion 26.

When opening the sack the ends 25 and 26 are pulled simultaneously. This action causes the portion of the string 17 within the opening 22 and the loop to pull out of the sack, bond 13 and loop 18, thereby releasing the string 17, so that when the end 26 is pulled the loop 18 is likewise released. The operation continues until both strings 16 and 17 are released from the sack plies. The firm retention of the string of the closure loop within the opening 22 provides a securely fixed frictional arrangement by locking the string so that it will not loosen and unravel during shipping or rough usage of the sack, and thereby provides a locking feature in combination with the balance of the inter-engaged strings. This arrangement of the continuing loop as well as the securing of the locking portion at 22 also closes the upper corner of the sack so that material can not escape therefrom. It should be understood that modified types of strip 13 could be used also.

Figure 4 illustrates the use of the arrangement with the single thread type of stitching and employing the same member 13.

In this arrangement the single thread is indicated by the character 27 which passes through the openings 28 and continues into the loops 29 which loops 29 encircle the next successive loop portion passing through the next successive opening with the string 27, returning to the opening 28 and continuing along the first side of the sack.

To form the locking means in this type of arrangement, the string 27 passes downwardly into the tightly restricted opening 30 and is looped over at 31, and then passes upwardly through the opening 30 back through the loop 29 and thence passes downwardly through the opening 28 and extends into the extended portion 32. In opening this arrangement, the extended portion 32 only is pulled, which first pulls the loop 31, with this operation continuing through the successive loops 29 until the string 27 is entirely released. In this latter structure the loop within the opening 30 provides the locking feature, functioning similar to that of the above described arrangement, with the exception of course, that only one string is used, this one string arrangement being well known in the art, it also being understood that modified forms of strip 13 could be used here also.

Figure 6 illustrates a modified form of the arrangement, wherein the plastic member 13 is not directly affixed to the sack edge, but is positioned at a distance therefrom, the stitching in this form continuing along the sack as explained heretofore; and also extending beyond the sack. In this instance the extending stitching is indicated by the character 33, the stitching then passing into

the member **13** in either the double thread form shown in Figure 2 or the single thread form shown in Figure 4, and having the same end pulling extremities such as **25** and **26**, or **32**. In this structure also the member **13**, instead of being bent over as at **14** can be merely one single flat strip, yet including the exact looped and tightly retained structure as shown in the above mentioned figures.

It should be understood that other types of stitching, or similar operations, in conjunction with any material to execute the aforesaid, could be used in my invention without, however, departing from the essential principle of the locking closure idea.

It will now be seen that I provided all of the advantages mentioned in the objects of my invention with further advantages being readily apparent.

Some changes may be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim as my invention:

1. A bag closure and opening device comprising a pair of stitching cords stitched along the normally opening end of a sack, one of said cords passing through the sack plies and including integral loops, the other of said cords looped engaging through and about said integral loops consecutively and thus continuing successively and retaining the same, a resilient member attached at the end of said stitching and resiliently retaining the integral loops of said cord of the stitching thus formed, said resilient member including an extra tightly restricted opening, said sack plies including openings coincident with said extra opening, the other of said cords being looped and engaged within said openings to provide locking means for said other cord.

2. A bag closure and opening device comprising a pair of stitching cords stitched along the normally opening end of a sack, one of said cords passing through the sack plies and including integral loops, the other of said cords looped engaging through and about said integral loops consecutively and thus continuing successively and retaining the same, a resilient member attached to the end of said stitching and resiliently retaining the integral loops of said cord of the stitching thus formed, said resilient member including an extra tightly restricted opening, said sack plies including openings coincident with said extra opening, the other of said cords being looped and engaged within said openings to provide locking means for said other cords, the other of said cords being on one side of said sack only except where it provides said locking means.

References Cited in the file of this patent

UNITED STATES PATENTS

1,955,310	Powell	Apr. 17, 1934
2,109,533	Hurrey	Mar. 1, 1938
2,307,998	Eaton	Jan. 12, 1943