

**Aug. 31, 1965**

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**3,203,551**

FILTER BAG

Filed Aug. 13, 1962

FIG. 1.

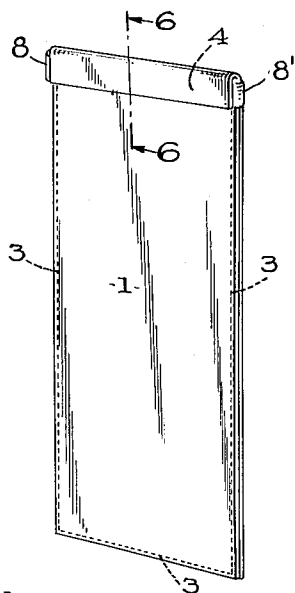


FIG. 2.

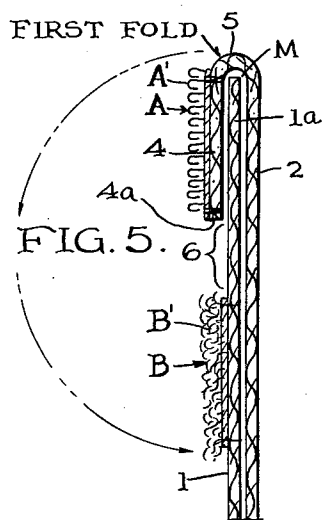
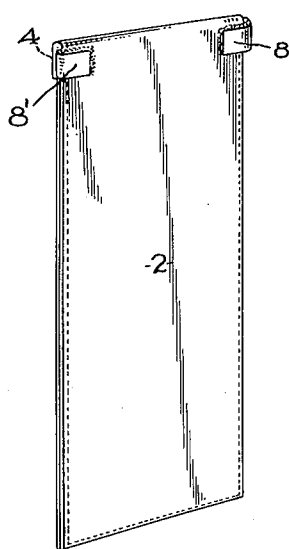


FIG. 6.

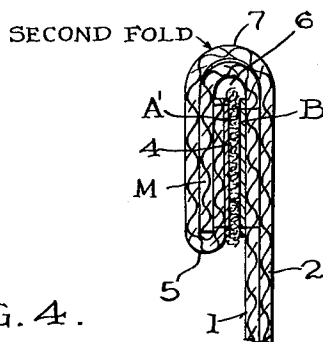


FIG. 4.

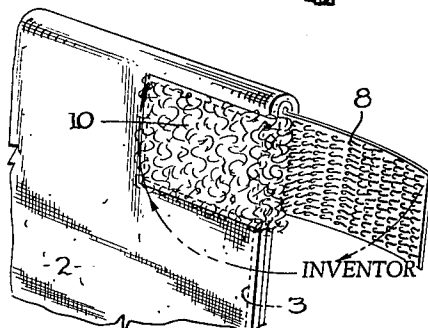
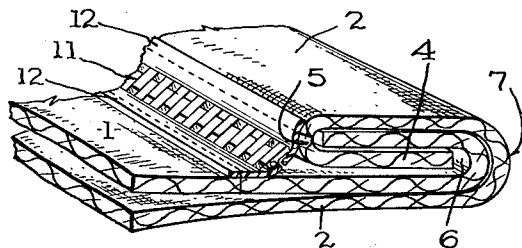


FIG. 7.



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## 3,203,551 FILTER BAG

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Filed Aug. 13, 1962, Ser. No. 216,379

2 Claims. (Cl. 210-486)

This invention relates to filter bags made of textile fabric material, and more particularly to a flexible non-metallic closure means for the mouth of the bag which renders it compatible for use with liquids in general, including, aqueous solutions containing electrolytic salts used in the electroplating industry.

Heretofore, it has been the practice to close bags of the type described with a clip made of stainless steel or hard rubber. Closure members of this type are at times incompatible with chemical solutions and therefore, special bags have been made which are appropriate for the procedure involved.

Accordingly, a primary object of the present invention is to provide a bag made of textile fabric material having integral closure means made from a portion of the bag and an integral flexible non-metallic fastener, thereby avoiding all rigid types of clips. In other words, the present invention contemplates a filter bag made of porous textile fabric wherein all of the closure or sealing means is non-metallic, flexible, and is an integral part of the filter bag thereby increasing the range of use, the longevity of the bag itself, and ease of handling and storage.

Another object of the invention is to provide a sealing arrangement wherein several folds are utilized, thereby to insure complete and satisfactory closing of the mouth of the bag and at the same time preventing the bag from being accidentally or prematurely opened if grasped by a portion of the top during handling at any stage of installation, or removal.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, arrangement, and combination of parts as hereinafter more fully described, illustrated, and claimed.

A preferred and practical embodiment of the present invention is shown in the accompanying drawings, in which:

FIG. 1 is a perspective view of the bag as viewed from the front with the closure means sealing the mouth of the bag.

FIG. 2 is a view similar to FIG. 1 showing the back of the bag.

FIG. 3 is an enlarged detail perspective view of one corner of the bag illustrating the cover portion of the sealing means raised at one end to expose the mouth of the bag.

FIG. 4 is an enlarged detail perspective view of the rear upper corner of the bag as shown in FIG. 2 to illustrate the locking tabs which hold the cover flap secure at the edges of the bag after it has been made ready for use.

FIG. 5 is a detail vertical sectional view illustrating the front and rear walls of the bag with the cover flap folded over the front wall to provide the first fold, and before the non-metallic locking means is lowered onto its counterpart as shown for example in FIG. 6.

FIG. 6 is a detail sectional view taken on the lines 6-6 of FIG. 1.

FIG. 7 is a detail perspective view of a modified form of bag closure means.

Similar reference characters designate corresponding parts throughout the several flanges of the drawings.

As will be observed from FIGS. 1 and 2, the textile

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fabric bag includes a front wall 1 and a back wall 2, connected at the sides and bottom by suitable stitching 3.

The back wall 2 is extended beyond the front wall 1 to provide a cover flap 4. Conveniently, as shown, the cover flap may be an integral extension of the back wall, or alternatively, it may be a separate piece stitched thereto. In either case, the cover flap performs the function of closing the mouth M of the bag and effecting further closing security through the medium of a first fold 5.

The exposed face of the flap 4, which would be the outer face when the first fold 5 is made, is provided with one part A of non-metallic bag sealing means whose counter part B is stitched or otherwise appropriately secured to the front wall 1 a suitable distance below the upper edge 1a of said wall as shown in FIG. 3. This arrangement leaves space for overlapping of the flap 4 with the wall, while, at the same time, the edge 4a of the flap terminates above the upper edge of the complementary securing means B to provide a second fold space 6, as clearly shown in FIGS. 3 and 5.

Assuming that the cover flap 4 has been placed over the upper edge of the front wall 1 as shown in FIG. 5, the second fold space or area 6 permits of making a second fold 7 as shown in FIG. 6 so that the non-metallic locking members A and B may be pressed together to securely and firmly close the mouth of the bag.

The opposite edge portions of the flap 4 are provided with locking tabs 8 and 8'. These locking tabs have their front faces provided with locking means A which is of the same nature as the locking means on the normally exposed face of the flap.

The inner ends of these tabs are stitched at 9 to the flap 4 while their opposite ends are free and intended to engage with a holding area 10 which has the same characteristics as the part B of the complementary securing means A-B.

As will be seen from FIG. 1, the tabs 8, 8' are carried by the flap 4 and the flap 4 constitutes a cover strip for the mouth M of the bag. That is to say, the flap 4 and the tabs 8 and 8' by reason of the fact that the stitching 9 connects the ends of the flap with the back, a cover pocket is formed over the mouth M of the bag.

The purpose of the tabs 8 and 8' is to secure the sealing assembly at the top of the bag against accidental or unintentional opening in the event that, if the bag is closed as shown in FIG. 1, and finger pressure is applied to the mid-portion of the flap 4, the tabs 8 and 8' will prevent the mouth of the bag being entirely opened. In other words, before the flap 4 as shown in FIG. 1 can be separated from the front wall 1, it is necessary to first release the tabs 8 and 8', thereby insuring a secure closure of the bag throughout its period of use.

The non-metallic holding means A and B may be of any suitable type wherein the member A, for example, is provided with a number of hook-like gripping elements which, when pressed against the matted or tufted surface B' of member B, become imbedded therein so that separation takes place only upon application of force to the flap 4 after the tabs 8 and 8' have been released.

FIG. 7 illustrates a further type of holding means, namely a plastic zipper. Referring to this figure it will be seen that the non-metallic teeth 11 are carried by flanges 12-12 which may be stitched or otherwise appropriately secured to the front wall 1 and the back wall 2 at the fold 5. Although not shown, the ends of the zipper are continued around the side edges of the fold in the same fashion as the locking tabs 8 and 8', and for the same purpose.

From the foregoing, it will now be seen that the present invention provides an all-textile fabric filter bag or the like wherein no rigid closure elements, either of hard rubber or metal, are necessary.

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I claim:

1. In a fabric filter bag structure, the combination comprising,

a front wall and a rear wall connected at their bottom and side edges and open at the top to provide a mouth, a cover flap over said mouth, said flap secured at least to the rear wall at opposite side edges thereof,

first securing means secured to said flap and extending outwardly beyond each of the side edges thereof providing a pair of tab members, said securing means having a plurality of non-metallic securing elements on the surface thereof,

second securing means secured to the outer surface of the front and rear walls of said bag below and spaced from the first securing means,

said second securing means having a plurality of non-metallic second securing elements on its surface for releasable interlocking engagement with the securing elements of said first securing means, said second securing elements being disposed on the front and rear walls of said bag a sufficient distance below said first-mentioned securing elements to be in alignment with said first mentioned securing elements, said first men-

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tioned securing elements overlapping said second securing elements when said first securing means is folded downwardly and the securing elements thereof are pressed into contact with the second securing elements of said second securing means on both the front and rear walls of the bag to provide a seal therebetween.

2. The filter bag structure of claim 1, wherein the securing elements of one of the securing means comprise a plurality of hook-like members and the securing elements of the other securing means comprise a plurality of loops.

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