April 24, 1928. 1,667,609

J. TAMASSY

BAG SEAL

Filed Nov. 12 1926

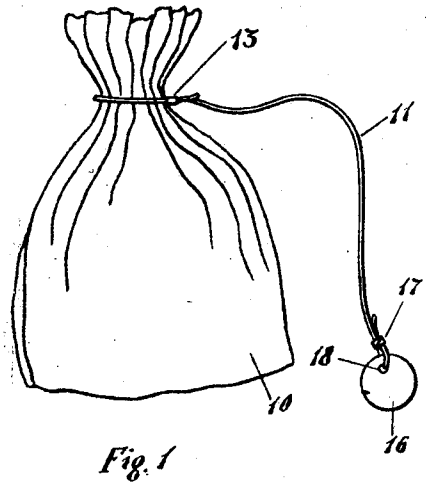



Fig. 1

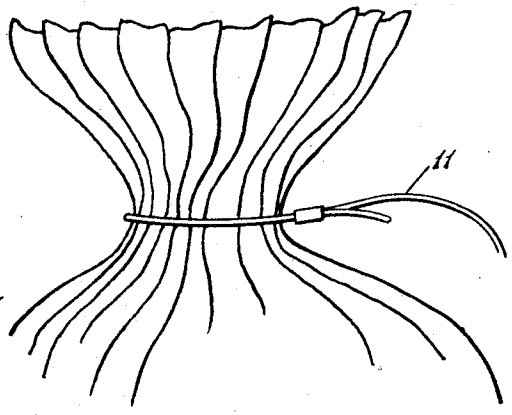



Fig. 2

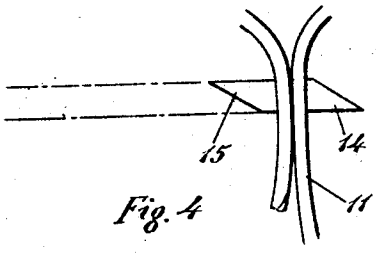



Fig. 4

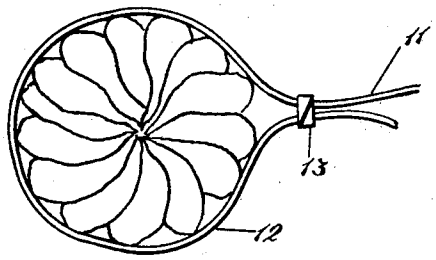



Fig. 3

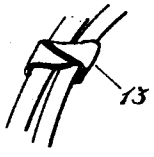



Fig. 5

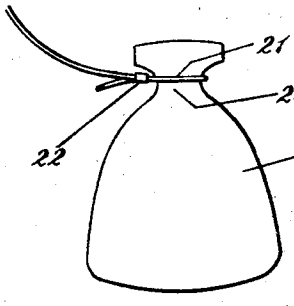



Fig. 6

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# UNITED STATES PATENT OFFICE.

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## BAG SEAL.

Application filed November 12, 1926. Serial No. 148,021.

This invention relates to bags and more particularly to means for sealing small fabric bags of the type used for holding a small quantity of tea leaves or other substances for preparing infusions.

The primary object of this invention is to provide a novel and improved method of sealing the mouth of a bag, which is both effective and inexpensive, being adapted to be carried into practice by means of machines which may be made entirely automatic in their operation.

A further object is to provide a novel and improved means for fastening the two strands of a string after winding it about the neck of a bag in order to seal the bag.

A still further object is to provide a novel and improved bag adapted to be used as a container or cartridge for tea leaves and the like, said bag being provided with a string or with other similar suspension means secured to the bag in a novel and improved manner which is also per se, one of the features of the present invention.

Other objects and advantages of the present invention will more fully appear as the description proceeds and will be set forth and claimed in the appended claim.

The use of small bags made out of relatively inexpensive fabric, as containers for tea leaves or other substances adapted to make infusions, is well known. The bags used are generally of the open mouthed type, and after a bag has been filled with tea leaves or ground coffee or the like, just enough for a single brewing, its mouth is drawn into folds and some suitable means are employed for holding the mouth closed.

For instance, in another application for patent on bag closures, filed April 29, 1926, Serial No. 105,405, allowed July 15, 1926, I have described an arrangement where the mouth of the bag is held closed by means of a relatively stiff piece of metal wire inserted through its neck and bent around it.

Bags used for the purpose mentioned, are usually provided with a string or some other suitable suspension means which can be used for holding the bag in suspension when it is being inserted into a cup of boiling water, and said string or suspension means is generally secured to the bag by means of the seal which holds the mouth of the bag closed.

The other end of the string is usually provided with a tag affording a convenient means of holding the string, while the bag is thus inserted into the hot water; and in the present case, I also provide an improved method of attaching the string to the bag, which is quite similar to the way of fastening the loop portion of the string wound around the neck of the bag, the finished article comprising the bag proper, the string attached thereto, and the bag attached to the string being suitable for mass production by means of machines, the operation of which is entirely automatic.

This feature is very important because low cost of production is absolutely essential in this type of product, since individual containers for tea leaves are produced in large quantities and must be sold within certain definite price limits; if the increase in cost to the consumer due to the cost of packing is too high, the article becomes unsaleable, and this is a condition which imparts a special importance to any improvement which may be introduced in the method of sealing and otherwise preparing the containers, tending to reduce the cost of the product, without impairing its capacity for giving effective service.

In products of this nature, it is also desirable that the seal be of such a nature that any attempt to tamper with the contents of the bag for the purpose of substituting an inferior product or for the purpose of refilling an empty bag for resale purposes, will be prevented or defeated by the cost entailed.

In the accompanying drawings, I illustrate a preferred embodiment of my invention and in the same

Fig. 1 is a view in perspective of a tea cartridge embodying my invention;

Fig. 2 is a fragmentary view in elevation of the neck portion of the bag used in Fig. 1 in an enlarged scale showing in detail, the nature of the seal applied;

Fig. 3 is a plan sectional view through the neck of the bag in Fig. 2;

Fig. 4 is a detail plan view showing two strands of the string to be fastened together by means of a metal clip, preferably obtained from a coil or strip;

Fig. 5 is a detail view in perspective of the same showing the clip applied in position; and

Fig. 6 is a detail view illustrating a modified way of attaching the bag to a string.

Referring to Fig. 1, 10 designates a bag made of suitable fabric, preferably open mesh cotton fabric, adapted to contain a predetermined quantity of tea leaves or coffee. The bag is open at the top and after filling its mouth is closed by gathering together its edges into folds, and then it is maintained closed by applying or winding about its neck, the free end of a suspension string or wire 11 formed into a loop as shown at 12, and by fastening the free end of the wire string to the body thereof by means of a metallic clip 13, preventing the loop portion of the string or wire from becoming loose.

In the embodiment of my invention shown, which is the one that I prefer on account of its simplicity, one of the ends of the wire or string 11 is simply bent over to form a U-shaped loop, about the neck of the bag as shown in Fig. 3; the two strands of the wire or string again come together after encircling the neck, and are then fastened together by means of a suitable clip made out of a relatively soft flat metallic wire or strip.

In its original form, the clip is merely an elongated piece of metallic strip preferably having its two ends pointed or at a slant, so that a general outline of the clip is not rectangular but is rather rhomboidal in shape.

The two strands of string or wire are applied against the inner surface of the clip and the two pointed ends 14, 15, of the clip are then bent over and flattened against the strands remaining clamped thereto. The pointed ends of the clip are preferably long enough to reach over both strands so that after the operation is completed, there are two straight edges and two inclined edges abutting against the strands of wire or string, all exerting a frictional resistance which very effectively prevents the clip from slipping off and also prevents the noose or loop of the string from getting loose.

The metallic clip must, of course, be made out of metal which is not injurious to health and which is not easily corroded, although a good grade of soft iron wire has been found to be both inexpensive and satisfactory. Aluminum is also suitable, as well as tin, but these two metals are somewhat expensive, and therefore when the price limitations are too severe, it may not be possible to employ them.

On the other hand, irrespective of any price consideration, copper or brass or zinc should not be used on account of the poisonous nature of some of their salts which may easily be formed when the metals are exposed to the action of corrosive agents.

In practice I have found that an ordinary cotton string is quite satisfactory for use as a suspension member for the bag, being quite effective as well as inexpensive; however, if preferred, a flexible metallic wire may be employed.

The sealing of the bag is thus obtained in a relatively simple manner entailing operations of an equally simple character; and one important feature of the arrangement is that the string serves both as a means for sealing the bag and as a means for handling and suspending the same, so that due to this feature, the cost of production is further appreciably reduced.

The other end of the string carries a tag 16, affording a convenient means for holding the string and bag suspended therefrom. Also, in this case, the end of the string is preferably formed into a loop, its free end being inserted through or wound about the tag and being brought alongside the body of the string to be fastened thereto, by means of a clip 17 quite similar in design, principle and operation, to the clip 13 previously described.

In the arrangement shown in Fig. 1, the tag is provided with an opening 18, through which the free end of the wire may be inserted, and then folded over close to the body of the string to be fastened thereto by means of clip 17 as stated.

In the arrangement illustrated in Fig. 6, the tag 19 is formed with a neck portion 20, about which may extend the loop portion 21 of the outer end of the string, the free end of said loop being like in the previous case brought alongside the body of the string and fastened thereto by means of a clip 22, applied in the same manner as previously described.

The clip by means of which the string loop is secured to the tag, may also be applied mechanically; and in fact in practice, the same machine folds, fastens and secures both ends of the string applying a clip at each end in the manner described, cutting off both from the same strip or coil.

In the case of bags of ordinary size, the type of fastening means described may be placed in position by hand or by means of an ordinary pair of pliers, as well as by machines or by automatic production methods; but in the case of small bags such as are used to hold a small quantity of tea leaves or coffee, it is very difficult to press the clip in position without the aid of some specially designed machine, therefore, this makes it all the more difficult for anyone to open the clip and replace it. Labor costs are so important an item in the production of articles of this kind, that the moment the

sealing operation is made too long or too difficult to be performed by hand, tampering with or adulteration of the contents of the bag as well as the production of imitation products, subject to misrepresentation, automatically becomes unprofitable and these unfair practices are therefore discouraged before they are attempted. Although for the sake of simplicity I prefer to fold the suspension string into a single loop as shown, it is obvious that if desired, the free end of the string may be wound one or more times about the neck of the bag before its free end is fastened to the body of the string; therefore, the word "loop" hereafter mentioned in the claim, will be understood to mean either a single or a multiple loop as the case may be.

The invention may be varied in other minor details without departing from the inventive idea and accordingly, the drawings will be understood as being intended for illustrative purposes only and not in a limiting sense.

Therefore, I reserve myself the right to carry my invention into practice in any way or manner which may enter fairly into the scope of the appended claim.

I claim:

An infusorial container comprising an open mouthed bag made of flexible fabric, having its mouth closed by gathering its folds together to form a neck, a flexible suspension member therefor, having one of its ends formed into a loop encircling said neck, and a metallic clip formed by a relatively short length of flat metallic wire having a body portion abutting against the strands of said loop and having two slanted ends each end being bent and flattened over both said strands, fastening the free end of said loop to the body portion of said suspension member.

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