TUBULAR BAG AND METHOD FOR FILLING IT

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Abstract

Tubular pouch (10) having a spout (13) sealed in the region of a top sealing seam (12) and having a stand-up base (11). The top sealing seam (12) is unsealed at least one location (14, 15) between the spout (13) and the outer edge (partial sealing), so that, when the pouch (10) is being filled, air can escape from the pouch (10) to the outside (arrow 16) through that unsealed location (14, 15).
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[0001] The present invention relates to a tubular pouch, especially a stand-up pouch, having a pouer or spout sealed-in in the region of a top sealing seam and optionally having a base, especially a stand-up base, and to a method of filling such a tubular pouch.

[0002] Tubular pouches of this kind are generally known, for example from DE 202 12 251 U1, which originates from the applicant. They are used for holding liquid, paste-form, powdered or other pourable products. Filling such tubular pouches through the spout or an opening formed therein is problematic, because the air in the interior of the pouch also has to escape through that opening. This can have the result that, along with the air flowing out of the pouch to the outside, introduced pouch contents are also carried to the outside. The result is undesirable contamination of the filling plants and also variations in filling weight. Furthermore, the filling speed suffers quite considerably therefrom, since the above-mentioned problems can essentially only be solved by carrying out the filling operation relatively slowly, it being necessary additionally to provide at least one air-outlet opening in the filling head with the result that the filling cross-section becomes correspondingly smaller.

[0003] The present invention is therefore based on the problem of providing a tubular pouch and a method of filling same, with which all the above-mentioned problems can be avoided. In particular, it should be possible to effect clean and rapid filling of tubular pouches of the kind under consideration herein.

[0004] That problem is solved in respect of a tubular pouch by the characterizing features of claim 1 and in respect of the method by the characterizing features of claim 2, with claim 2 relating to a preferred tubular pouch construction.

[0005] A key aspect of the present invention is therefore that the top sealing seam is initially subjected to "partial sealing" such that at least one location between the spout and the outer edge of the top sealing seam there is arranged an unsealed location, so that, when the pouch is being filled, air can escape from the pouch to the outside through that unsealed location. It is therefore no longer necessary for the air in the interior of the pouch, when the pouch is being filled, to escape to the outside through the spout or through the filling opening, with all the afore-mentioned disadvantages.

[0006] Preferably, the top seam has at least one unsealed location on each side of the spout, so that a large amount of air from the interior of the pouch can escape to the outside in an extremely short time, with the result that the filling speed is increased accordingly.

[0007] After the pouch has been filled with liquid, paste-form or pourable contents through the spout, the at least one unsealed location of the top sealing seam is sealed and thus fluid-tightly closed, this being referred to as so-called "residual sealing".

[0008] An exemplary embodiment of a tubular pouch according to the invention and the method of filling same is described in greater detail below with reference to the accompanying drawings.

[0009] FIG. 1 shows a tubular pouch only partially sealed in the region of the top sealing seam, with a diagrammatic representation of its being filled; and FIG. 2 shows the tubular pouch after filling and residual sealing.

[0010] The tubular pouch 10 shown in FIG. 1 is in the form of a stand-up pouch having a stand-up base 11 and a pouer or spout 13 sealed-in in the region of a top sealing seam 12. The top sealing seam 12 is only partially sealed on both sides of the spout 13, that is to say it has an unsealed location 14, 15 on each side, so that, when the pouch 10 is being filled, air can escape from the pouch 10 to the outside through those unsealed locations 14, 15. That flow of air is indicated by reference numeral 16 in FIG. 1. Furthermore, filling the tubular pouch 10 is indicated by the arrow 17 in FIG. 1.

[0011] After the tubular pouch 10 has been filled in the way described with reference to FIG. 1, the so-called residual sealing is carried out, by means of which the unsealed locations 14, 15 of the top sealing seam 12 are sealed and thus fluid-tightly closed. That residual sealing is indicated in FIG. 2 by reference numeral 18.

[0013] In addition to what has been said above it should also be mentioned that both the partial sealing and the residual sealing are preferably carried out as ultrasound sealing. The appropriate technical means for that operation are generally available, so that for that reason too the method according to the invention is advantageously suitable for use and, moreover, also on conventional filling plants.

[0014] The size, i.e. the length, of the unsealed locations 14, 15 and the associated openings in the container for the escape of air from the interior of the container during filling of the container depends, of course, upon the nature of the product, especially the viscosity thereof, with which the pouch 10 is to be filled.

[0015] Finally, it should be pointed out in connection with the prior art that it has already been proposed to evacuate the interior of a container to be filled. However, that technique is not suitable for use, or is at least not advantageous, in the case of tubular pouches of the kind under consideration herein. For that reason too, the described invention is advantageous in comparison with the prior art.

[0016] All the features disclosed in the application documents are claimed as being important to the invention insofar as they are novel over the prior art either alone or in combination.

REFERENCE NUMERALS

[0017] 10 tubular pouch
[0018] 11 stand-up base
[0019] 12 top sealing seam
[0020] 13 spout
[0021] 14 unsealed location of the top sealing seam
[0022] 15 unsealed location of the top sealing seam
[0023] 16 flow of air
[0024] 17 filling flow
[0025] 18 residual sealing

1. A stand-up or other tubular pouch, said pouch having an outer edge, a top sealing seam and a pouer or spout sealed-in in the region of said top sealing seam, wherein at least one unsealed location is provided in said top sealing seam between said spout and said outer edge to allow air to escape from said pouch to the outside through said at least one unsealed location when said pouch is being filled.

2. A tubular pouch according to claim 1, further including a stand-up or other base.
3. A tubular pouch according to claim 1, wherein said top sealing seam has at least one unsealed location on each side of said spout.

4. A method of filling a tubular pouch according to claim 1, comprising the steps of filling said pouch with liquid, paste-form or pourable pouch contents through said spout or an opening formed therein, and allowing air in the interior of the pouch to escape to the outside through said at least one unsealed location in said top sealing seam during filling, and, after said pouch has been filled, sealing said at least one unsealed location of the top sealing seam to provide fluid-tight closure.

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