SUMMARY OF THE INVENTION

In accordance with a first aspect of the invention, there is provided a method of manufacturing sachets including: providing a web of semi-rigid material; moving the web of semi-rigid material through a cutting station and simultaneously cutting a discrete cut in the web of semi-rigid material while the web of semi-rigid material continues to move through the cutting station, the step of cutting the web of semi-rigid material comprises cutting through the full thickness of the web of semi-rigid material; and sandwiching the web of semi-rigid material between a first flexible web of material and a second web of flexible material such that the first web of flexible material seals the discrete cuts in the semi-rigid web of material and the second web of flexible material forms a continuous elongate reservoir with the web of semi-rigid material.

The method may further comprise filling the reservoir with a liquid, paste or similar substance.

The method may further comprise sealing the filled reservoir at discrete locations to form discrete reservoirs.

The method may further comprise cutting a plurality of discrete cuts and wherein each of the discrete reservoirs comprises a discrete cut.

The web of semi-rigid material and the first web of flexible material may be pre-laminated prior to the addition of the second web of flexible material.

The method may further comprise forming the reservoir by sealing the second web of flexible material to at least part of the first web of flexible material and/or the web of semi-rigid material at or near the edges of the webs of material.

The cut may be a zigzag cut.

There is also disclosed an apparatus for cutting a web of material, the apparatus comprising: a cutting roller having an axis of rotation and an exterior surface with an external circumference; and at least one cutting element protruding beyond the exterior surface of the roller, wherein the cutting element has a cutting profile that is an open profile and is at least partly a zigzag shape, and the cutting element has a longitudinal length extending in a direction generally perpendicularly to the axis of rotation of the roller, the longitudinal length being shorter than the circumference of the roller such that the at least one cutting element cuts a corresponding discrete zigzag cut in the web of material.

The entire cutting profile may be a zigzag shape.

The apparatus may further comprise an anvil roller having a substantially smooth surface, wherein the at least one cutting element of the cutting roller may be configured to operate against the substantially smooth surface of the anvil roller.

The at least one cutting element may comprise a first cutting element and a second cutting element.

The longitudinal axis of the first cutting element may be longitudinally aligned with the longitudinal axis of the second cutting element.

The length of the first cutting element combined with the length of the second cutting element may be shorter than the circumference of the roller such that the first cutting element cuts a corresponding first discrete zigzag cut in the web of material and the second cutting element cuts a corresponding second discrete zigzag cut in the web of material with a portion of un-cut material between the first zigzag cut and the second zigzag cut.

There is also disclosed an apparatus for cutting a web of material, the apparatus comprising: a first cutting element and a second opposing cutting element, each cutting element having a cutting profile that is an open profile and is at least partly a zigzag shape having a longitudinal length that extends in a direction generally parallel to a length of the web of material; each cutting element being associated with a cam for controlling vertical movement of the cutting element and horizontal movement of the cutting element; each cutting element being associated with a rail for restraining movement of the cutting element; wherein the cams and rails are arranged such that the first cutting element follows a path and the second cutting element follows a path that mirrors the path of the first cutting element; and wherein the paths have adjacent sections and/or intersecting sections in which the cutting elements come together to discretely cut the web of material while leaving the material intact.

The entire cutting profile may be a zigzag shape.

The term ‘comprising’ as used in this specification and claims means ‘consisting at least in part of’. When interpreting statements in this specification and claims which include the term ‘comprising’, other features besides the features prefaced by this term in each statement can also be present. Related terms such as ‘comprise’ and ‘comprised’ are to be interpreted in a similar manner.

It is intended that reference to a range of numbers disclosed herein (for example, 1 to 10) also incorporates reference to all rational numbers within that range (for example, 1,

CLAIMS

1. A method of manufacturing sachets comprising:

providing a web of semi-rigid material;

moving the web of semi-rigid material through a cutting station and simultaneously cutting a discrete cut in the web of semi-rigid material while the web of semi-rigid material continues to move through the cutting station, the step of cutting the web of semi-rigid material comprises cutting through the full thickness of the web of semi-rigid material; and

sandwiching the web of semi-rigid material between a first flexible web of material and a second web of flexible material such that the first web of flexible material seals the discrete cuts in the semi-rigid web of material and the second web of flexible material forms a continuous elongate reservoir with the web of semi-rigid material.

2. The method according to claim 1, further comprising filling the reservoir with a liquid, paste or similar substance.

3. The method according to any one of the preceding claims, further comprising sealing the filled reservoir at discrete locations to form discrete reservoirs.

4. The method according to any one of the preceding claims, wherein the method comprises cutting a plurality of discrete cuts and wherein each of the discrete reservoirs comprises a discrete cut.

5. The method according to any one of the preceding claims, wherein the web of semi-rigid material and the first web of flexible material are pre-laminated prior to the addition of the second web of flexible material.

6. The method according to any one of the preceding claims, further comprising forming the reservoir by sealing the second web of flexible material to at least part of the first web of flexible material and/or the web of semi-rigid material at or near the edges of the webs of material.

7. The method according to any one of the preceding claims, wherein the cut is a zigzag cut.