

M&C FOLIO: 230P51992

WANGDOC: 0707P

Sealing Head for Applying Closures to Receptacles

This invention relates to a sealing head for fixing a closure on a neck of a receptacle.

For effective sealing, a closure should be applied to the mouth of the neck and held there while a skirt of the closure is pressed into engagement with the neck so that the receptacle is completely closed with no possibility that the contents can be removed without breakage of the closure or other evidence of tampering.

The present invention provides a sealing head for fixing a closure on a neck of a receptacle, the sealing head having an axis about which it is rotatable and along which it is movable, the head comprising a rotatably mounted central part which is to contact the closure on the neck as the rotating head is moved axially towards the receptacle, whereupon the said central part ceases to rotate, and means for pressing a skirt of the closure into engagement with the neck of the receptacle as the head continues to rotate after the said central part ceases to rotate.

In a preferred embodiment the sealing head consists of a series of cylindrical bodies, overlapping and coupled to each other, which have in the upper part the adequate elements to assure the simultaneous movement both on its axis and rotation, which enables it to

descend and turn thus locating itself over the neck of the receptacle, having taken into consideration that the moment the lower, external part is in contact with the recipient, this stops its circulation movement, the same applies if the central, internal part comes into contact with the upper surface of the closure, meanwhile, the remaining parts of the sealing head continue their circulatory movement. These pieces which continue to turn, are fitted to the ends of swing arms and have curved surfaces, have, at their extreme, rollers placed at the adequate angle to be placed over the closure so that by the pressure applied and their circular movement, the skirt of the closure is sealed over the neck of the receptacle.

Through the rotational and axial movements, carried out continuously, the simple location of the sealing head over the neck, already supplied with the unsealed closure, permits with ease the centralisation and sealing with the skirt to be carried out with precision in one easy operation.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is an axial section through a sealing head;

Figure 2 is a similar view, with the sealing head resting on the upper peripheral edge of a receptacle; and

Figure 3 is a similar view, with the sealing head in its lowest position, completing the fixing of a closure to a neck of the receptacle.

The sealing head illustrated has a stepped cylindrical body 1 whose upper end is adapted for connection to suitable means for moving the head axially and at the same time rotating it. The body 1 is screwthreadedly connected to a hollow actuating member 2 which has a plane bottom surface and a peripheral surface which expands upwardly.

Pressing rollers 5 are rotatably mounted on cranked levers whose upper ends 4 are rounded and cooperate with the actuating member 2. The levers (two or more) are carried by a mounting member 9 which rotates with the head but is axially movable relative to the head. The upper ends 4 of the levers are biased towards the axis of the head by an annular spring, e.g. an endless coil spring.

A central part 6 with a flat foot for resting on top of a closure is rotatably mounted in the mounting member 9 and moves axially with it. A peripheral part 3 with a lower face (optionally with a seating groove) for resting on an upper edge 8 of the receptacle is rotatably mounted on the mounting member 9.

In use of the sealing head, a metal closure with a skirt 7 is placed on a neck of the receptacle (see Figure 2). The head is rotated and is lowered axially

5 towards the receptacle. When the central part 6 and the
 peripheral part 3 come into contact with the closure and
 the upper edge 8 of the receptacle, respectively, they
 cease to rotate, while the head continues to descend and
 to rotate. Consequently the mounting member 9 continues
 to rotate relative to the receptacle but remains axially
 fixed while the body 1 with the actuating member 2
 continues to descend. The rounded upper ends of the
 levers 4 are pushed downwards and outwards, initially by
 10 the bottom surface of the actuating member 2 and then
 more gradually by the upwardly expanding peripheral
 surface. This forces the pressing rollers 5 against the
 skirt 7 of the closure, bending it inwards into close
 engagement below a rim of the neck (see Figure 3) as the
 15 mounting member 9 carrying the levers rotates about the
 axis of the head, and thereby sealing the closure.

When the closure has been sealed, the body 1 of the
 sealing head is raised, allowing the upper ends 4 of the
 levers to swing inwards, thereby releasing the rollers 5
 20 from the closure.

The sealing head described above can be installed in
 a mass production line and allows precise and easy
 formation of a perfect seal on a suitable designed
 receptacle. The head can align itself with the
 25 receptacle and bend and seal the skirt of the closure
 substantially in a single operation.

Claims:

(15)

1. A sealing head for fixing a closure on a neck of a receptacle, the sealing head having an axis about which it is rotatable and along which it is movable, the head comprising a rotatably mounted central part which is to contact the closure on the neck as the rotating head is moved axially towards the receptacle, whereupon the said central part ceases to rotate, and means for pressing a skirt of the closure into engagement with the neck of the receptacle as the head continues to rotate after the said central part ceases to rotate.

2. A sealing head as claimed in claim 1, in which the said central part is axially movable relative to the head, and the pressing means comprise pressing elements spaced around the axis of the head and mounted on levers which are carried by a mounting member which rotates with the head but moves axially with the said central part, the levers cooperating with an actuating member which rotates with and moves axially with the head so that the pressing elements are moved towards the neck while they rotate about the axis of the head as the head continues to move axially after the said central part has contacted the closure on the neck.



3. A sealing head as claimed in claim 2, in which the pressing elements are mounted on lower ends of the levers, the levers having upper ends which initially engage a bottom surface of the actuating member and which subsequently engage a peripheral surface of the actuating member as the head moves axially after the said central part has contacted the closure on the neck.

4. A sealing head as claimed in claim 3, in which the upper ends of the levers are biased towards the axis of the head.

5. A sealing head as claimed in claim 3 or 4, in which the peripheral surface of the actuating member expands upwardly.

6. A sealing head as claimed in any of claims 2 to 5, in which the pressing elements are rollers.

7. A sealing head as claimed in any preceding claim, including a rotatably mounted peripheral part which is to contact the receptacle as the head is moved axially towards the receptacle.

8. A sealing head substantially as described with reference to the accompanying drawings.

