Figure 16 shows the same view of the apparatus of figures 1 to 10 and 12 to 15 with the sachet referred to in the description of figures 12, 13 and 14 falling into the dispensing container referred to in the description of figure 10.

DETAILED DESCRIPTION OF THE DRAWINGS

With reference to the drawings a labelling apparatus is generally indicated by reference numeral 1.

The labelling apparatus 1 includes a conveyor means for having a receiving end that terminates underneath an outlet of a chute 2 and on opposite discharge end that terminates over a dispensing container 9. The conveyor means is a continuous conveyor belt 4 for located over rollers 5. The rollers 5 are supported between roller support braces 6. The support braces 6 are, in turn, attached to a support platform 7.

The conveyor belt for rotates anticlockwise about the rollers 5 when the apparatus 1 is viewed as shown in the drawings.

In accordance with a 1st example of the invention, the chute 2 discharges a medicine bottle 3 on the receiving end of the conveyor belt 4. As the conveyor belt 4 rotates, the bottle 3 moves in between alignment plates 11. The alignment plates 11 are elongate in the direction of the conveyor belt 4 and face each other from opposing sides of the conveyor belt 4. An alignment actuator rod 14 is selectively movable into and out of an alignment actuator housing 12 between a retracted position and an extended position. An operatively inner end of the alignment actuator rod 14 is attached to a rear surface of each alignment plate 11 so that movement of the alignment actuator rod 14 moves the plate 11 from a side of the conveyor belt 4 towards a centre thereof. Alignment movement support rods are attached on either side of the alignment actuator rod 14 to the alignment plates and are movable together with the alignment plates 11 in alignment movement support blocks 13. This supports the alignment plates so that they do not rotates about their connection with the alignment actuator rod or so that they do not cause rotation of the alignment actuator rod within the alignment actuator housing.

The arrows 28 shown in figure 3 show the direction of movement of the plate 11 from their retracted to their extended positions.

A further device, in the form of a label applicator 15, is next in line in the direction of movement of the top portion of the conveyor belt. The label applicator 15 includes a label applicator arm 16 that receives, in use, a label from a label roll and a printer (not shown) on a label applicator plate 17, at a free end of the label applicator arm 16.

The label applicator arm 16 is movable from a retracted position in which it locates mostly with in the label applicator 15 to an extended position as shown in figure 4.

The next device, in the direction of movement of the top section of the conveyor belt 4, is a sponge movement apparatus supported in a support beam 26 the sponge movement apparatus includes a sponge support plate 24 at the end of a sponge arm 27. The sponge arm 27 is movable from a retracted position in which it allows the movement of articles freely along the conveyor belt 4 to extended position in which a sponge 25 on the operatively underside of the sponge support plate 24 is pressed onto an article, such as the medicine bottle 3, to be labelled.

A further device is supported on the beam 26, further down in the direction of movement of the upper portion of the conveyor belt. This device is a suction apparatus 38 having a suction cup 37 movable between a retracted position in which it allows free, unimpeded movement of articles on the conveyor belt and an extended position in which a suction cup 37 or suction means at a free end of the suction arm 39 touches an article such as a plastics material sachet 36 and engages it for applying a vacuum through the suction cup 37 and up the arm of the suction apparatus 38.

A still further device in the form discard the wise includes a discard plate 19 located underneath to the side of the suction device. The discard device includes a discard plate 19 which is elongate and orientated in the direction of the conveyor belt 4, coaxially there with and to the side of the conveyor belt so that, in a retracted position it allows free movement of articles on the conveyor belt 4. The discard support rod 22 is attached behind the discard plate and discard plate movement support rods 23 located on either side of the discard

supporter rod 22 and on movable in discard support blocks 20 to ensure steady movement and prevent rotation of the plate 19 when the discard support rod 22 is extended from a retracted position to an extended position in which the plate has moved across the conveyor belt towards the discard shoot 8 thus to push an article moving or, in the case of the conveyor belt being at standstill, off the conveyor belt and onto the discard shoot 8 from where it can be discarded into a discard receptacle.

The dispensing container 9 is located and attached to a pharmaceutical dispenser unit front cover 10. The dispensing container can be accessed through a trapdoor from an operatively front side of the pharmaceutical dispensing unit (PDU) as is described further below.

The front cover 10 of the PDU includes a user interface and communication means in the form of a screen 31 a keyboard 32 a card reader slot 34 a speaker 33 and a microphone (not shown). The flat door 30 is operable from a front side of the PDU and is normally locked. The flat door is unlocked and access to the dispensing container is allowed once a patient has been positively identified and once it is confirmed that the correct medicine has been dispensed into the dispensing container.

In a 2nd example, and as shown in figure 12, a sachet 36 moves along the conveyor belt 4 in a sachet dispensing box 35 which has been dispensed by dropping the dispensing box 35 down the chute so that it lands with its open end facing upwards on the conveyor belt and then moves along the conveyor belt as described in more detail below.

In in use, and with reference 1st to figure 1, a bottle 3 is deposited from the chute onto the receiving end of the conveyor belt. The bottle will not necessarily align lengthwise on the conveyor belt 4 or transverse to the conveyor belt 4. To ensure proper alignment of the bottle the alignment plate 11 move closer together and force the bottle alignment as is shown in figure 2. The conveyor belt 4 may include a centrally extending recess (not shown) to support the bottle and to prevent it from rolling to the size of the conveyor belt 4. As shown in figure 3, the bottle is now moved to underneath the label applicator and a label 29 having an adhesive operatively underside is pushed onto the bottle 3 as is shown in figure 4. In figure 5, the label applicator has moved to its retracted position and the label is attached to the bottle albeit only at the central portion of the label 29 opposite ends of the label have not been pushed down onto the curvature of the

bottle. As is shown in figure 6, the bottle 3 now moves to a position underneath the sponge 25 and the device that operates the sponge pushes the sponge downwards as is shown in figure 7 and onto, as is shown in figure 8, the bottle 3. This movement forces the sponge 25, which is of course resiliently deformable to deform according to the shape of the curvature of the bottle 3 and it causes the label to be forced properly onto the curvature of the bottle 3.

At this point, if a barcode or other reader such as a camera having character recognition facilities, the discard plate 19 may be actuated to discard the bottle down the discard shoot 8 if it is determined that the incorrect medicine or dosage is about to be dispensed. If however it is confirmed that the correct medicine is about to be dispensed the bottle now moves further along the conveyor belt 4 from where it falls from the discharge end of the conveyor belt 4 into the dispensing container 9 where it is ready for collection by a patient once the patient has performed the necessary actions at the front end of the PDU. This process of dispensing the medicine is known and the medicine will only be dispensed once the patient has been positively identified and other requirements such as payment for the medicine is confirmed. In the dispensing process, access to a pharmacist may also be established through use of the communication means of the PDU which may even include a video link.

As shown in figure 12, a sachet 36 made of plastics material and including medicament is dispensed inside a sachet dispensing container or box 35, down the chute 2, onto the receiving end of the conveyor belt. The dispensing box 35 may or may not be orientated on the chute using the alignment plates 11. The alignment otherwise of the box will depend on the size of the label to be adhered to the sachet. Once the label 29 is attached with the label attachment means and once the sponge 25 has been activated to ensure proper adherents of the label to the uneven surface (due to the medicament inside of the sachet) of the sachet 36 by pushing down on the sachet 36 and label and deforming to conform with the uneven surface of the sachet, the suction cup 37 is moved onto the sachet from where vacuum apparatus 38 suction cup 37 and suction arm 39 ensure that the sachet remains attached to the suction cup 37 as the suction cup is moved upwards away from the dispensing box 35. Once the sachets moved out of the box, the discard plate 19 is moved forward across the conveyor belt to push the dispensing box 35 to the side and onto the discard chute 8. The box then travels down the inclined discard chute 8 into a collection receptacle from where it may be reused.

Sensors in the form of barcode readers and all cameras having character recognition software may be used at various intervals along the path of travel of the article to be labelled to ensure that the correct medicament is dispensed, that the and the like. If the incorrect medicament is about to be dispensed or if the incorrect information is displayed on the label 29, the discard plate 19 will be activated to move any such article off the conveyor belt 4 and down the discard chute 8.

It is envisaged that the invention described herein will be convenient to use in that sachets may be dispensed using open topped rectangular boxes, suction or vacuum means and a discard means for discarding the boxes from the conveyor belt. Once the box has been moved off the conveyor belt, the vacuum force is released so that the sachet drops back onto the conveyor belt from where it moves to the discharge end of the conveyor belt and falls into the dispensing container.

Labels are also securely attached to articles such as boxes, sachets having uneven surfaces and bottles having curved surfaces through use of the resiliently deformable sponge that, once a label is partially attached to an article, pushes the label further onto the article and such articles uneven or curved or angled surface. In the case of a box having a flat surface, the sponge is also useful to apply additional pressure which may not have been sufficiently applied by the label applicator.

It will be appreciated by those skilled in the art that the invention is not limited to the precise details as described herein. For example, labels may be attached to other types of packaging instead of bottles and sachets as described herein. For example, labels may also be attached to cardboard and other material boxes and the like.