# United States Patent

[11] 3,616,050



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[33] **Germany**
[31] **P 17 86 222.5**


[54] **APPARATUS FOR ATTACHING ADHESIVE LABELS**
**19 Claims, 5 Drawing Figs.**


[52] **U.S. Cl.** ..... **156/358,** 156/360, 156/556
[51] **Int. Cl.** ..... **G05g 15/08**
[50] **Field of Search** ..... 156/360, 358, 350, 556, 580, 584



[56] **References Cited**
UNITED STATES PATENTS

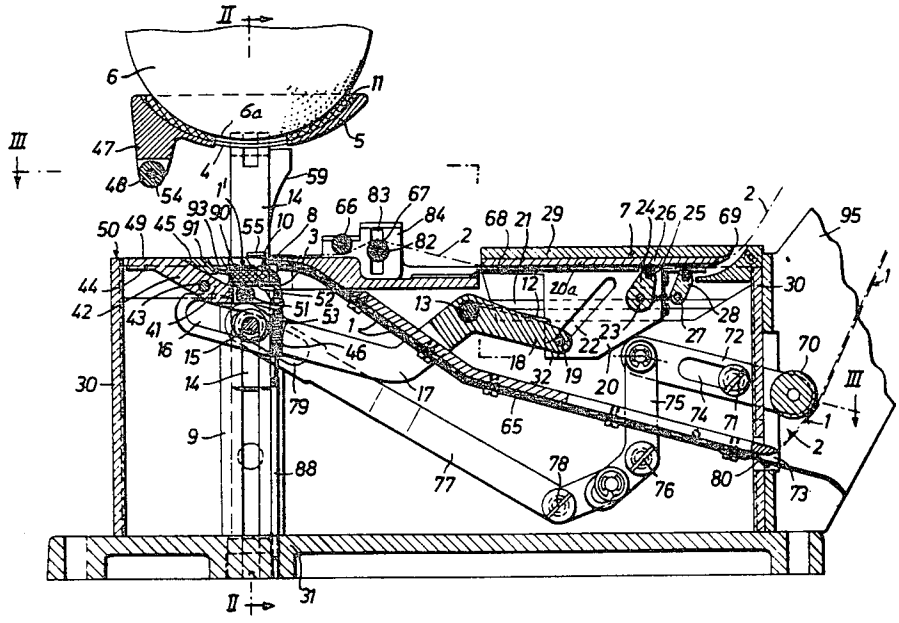
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|---|---|---|---|
| 2,167,468 | 7/1939 | VonHofe | 156/487 |
| 2,362,328 | 11/1944 | VonHofe | 156/350 |
| 2,492,908 | 12/1949 | VonHofe | 156/556 |
| 2,543,323 | 2/1951 | Marsh | 156/358 |
| 3,450,590 | 6/1969 | Mers | 156/584 |



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**ABSTRACT:** A label-attaching means has a supporting portion opposite an opening in a dished holding means for an object, such as a fruit. Transporting means successively place adhesive labels on the supporting portion, and when the holding means is displaced by the fruit or by manual pressure, the label-attaching means moves to a position in which the supporting portion thereof is located in the opening of the holding means, and presses the adhesive label against the surface portion of the object covering the opening.

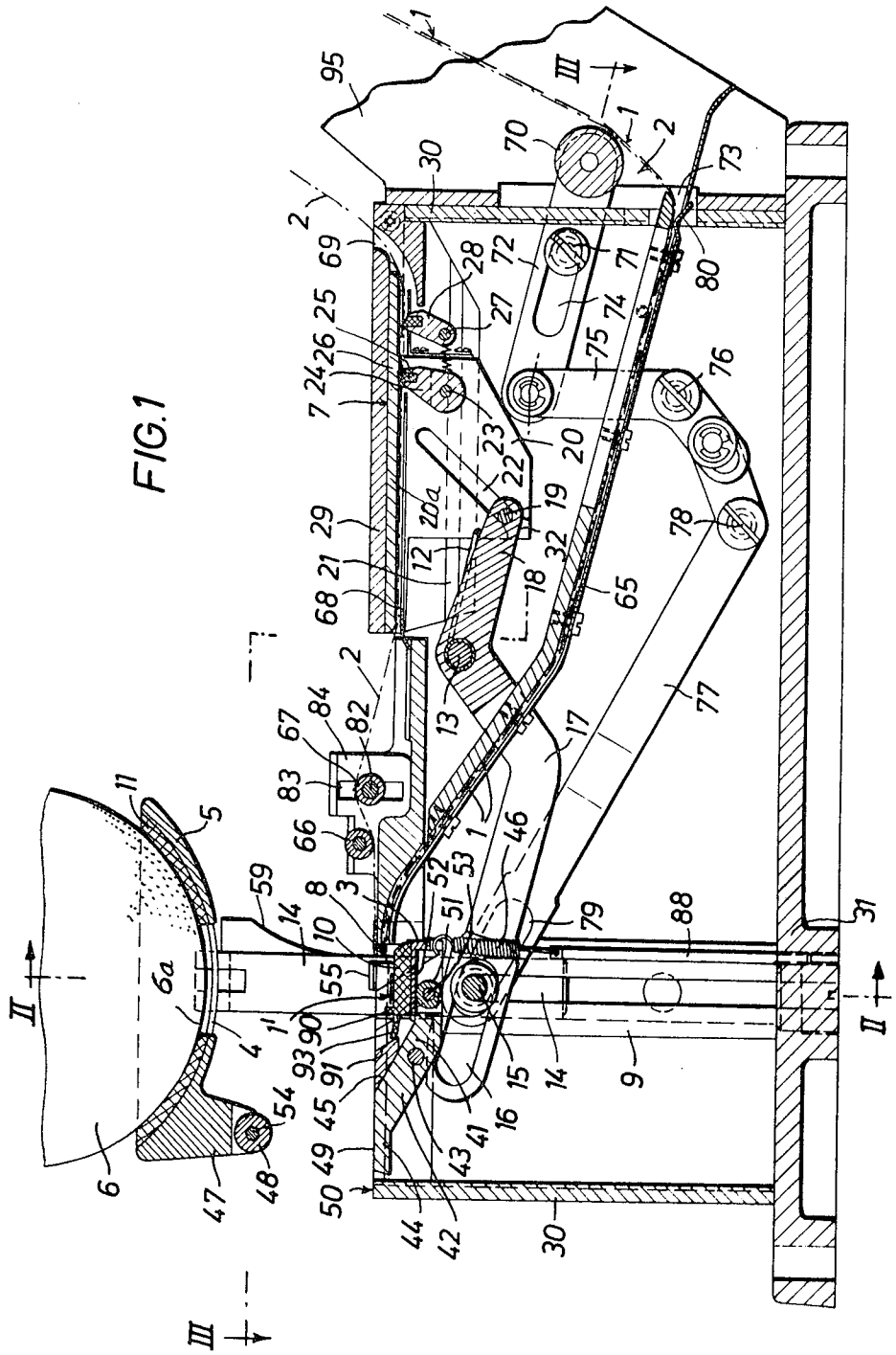



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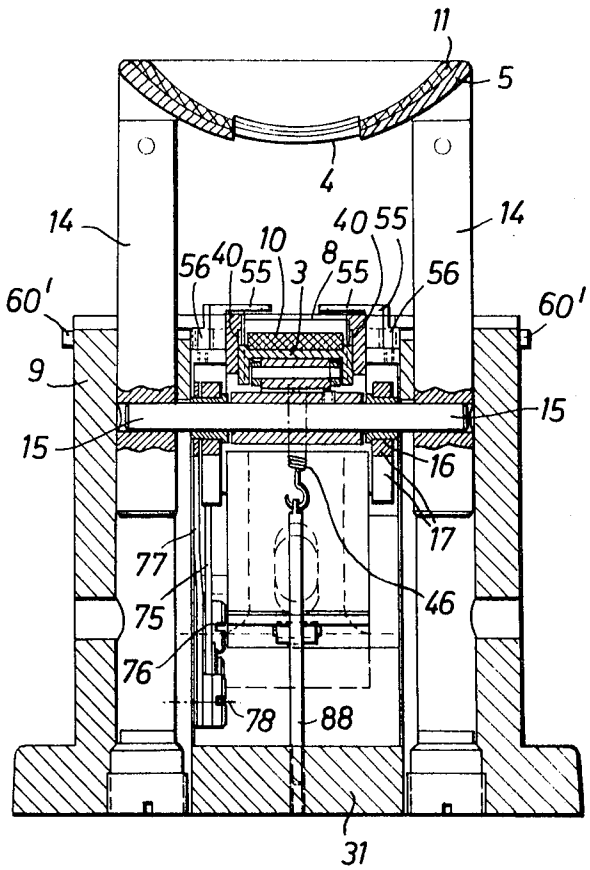
FIG.1



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FIG.2

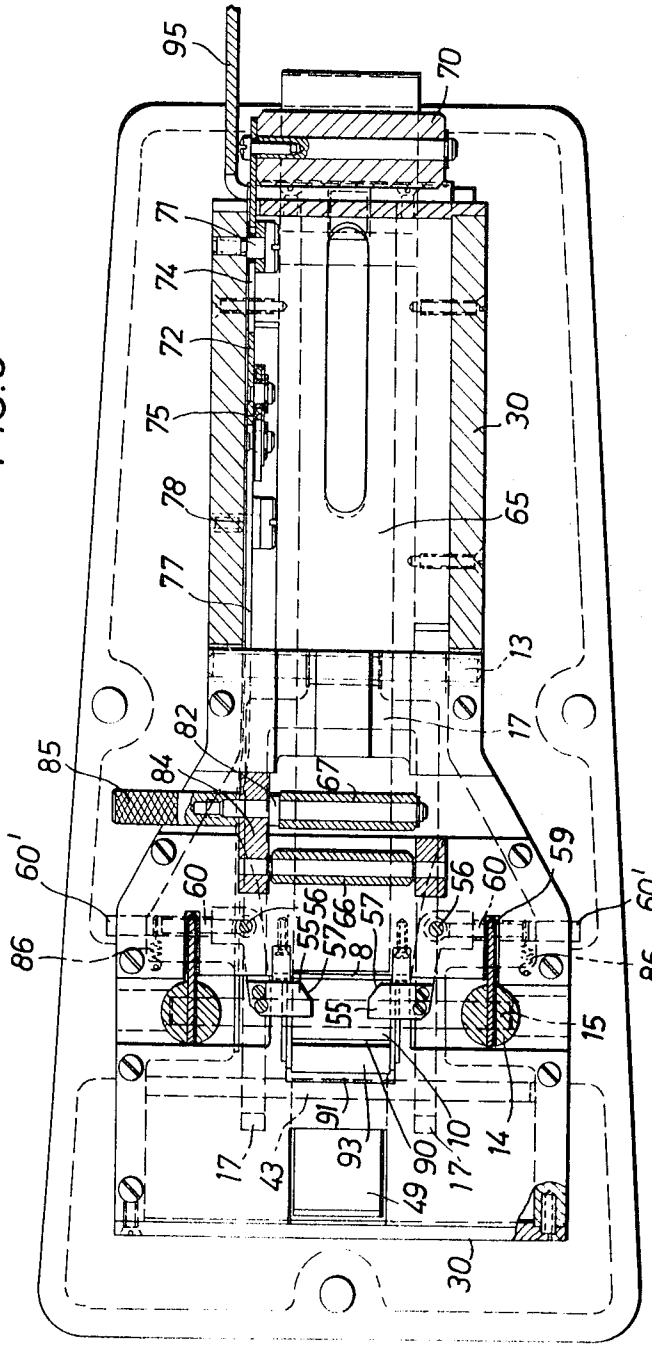



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FIG. 3




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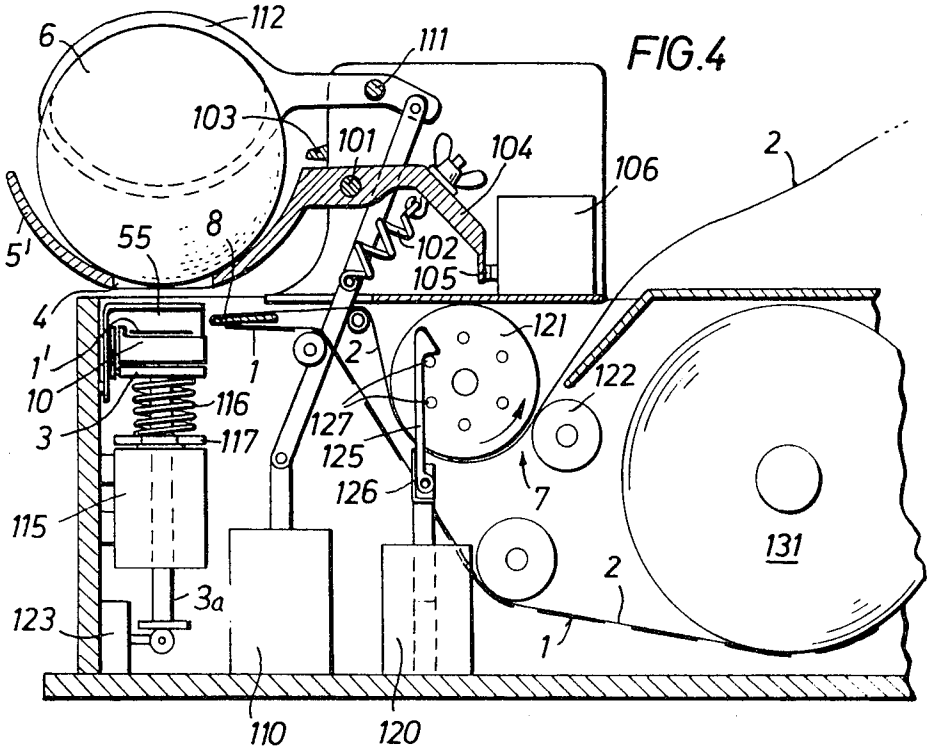



FIG.4

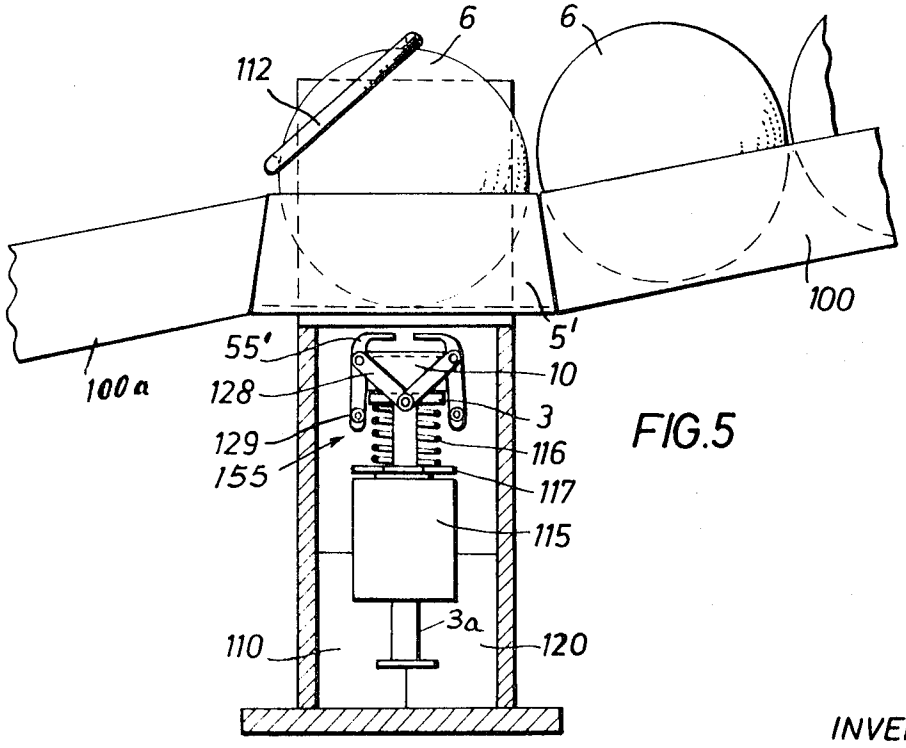



FIG.5

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# APPARATUS FOR ATTACHING ADHESIVE LABELS

## BACKGROUND OF THE INVENTION

Apparatus is known for attaching adhesive labels to objects. The U.S. Pat. No. 2,933,216 discloses an apparatus in which labels are placed on a conveyor with the adhesive face on top, so that objects can be pressed from above against the labels which adhere to the same.

The U.S. Pat. No. 3,265,553 discloses an apparatus in which labels with the adhesive face on top are placed on an elastic roller. The object is manually held against a label on the roller so that the label adheres to the object.

The labelling apparatus according to the prior art is not suitable for attaching labels to cylindrical or spherical surfaces of objects.

## SUMMARY OF THE INVENTION

It is one object of the invention to provide an apparatus for attaching adhesive labels to objects having a convex and curved surface, such as oranges, apples, lemons, grape fruits, bananas, cucumbers, bottles, balls, etc.

Another object of the invention is to provide apparatus for attaching adhesive labels in rapid succession to objects.

Another object of the invention is to provide an apparatus which can be adapted for attaching labels to differently curved surfaces of objects.

Another object of the invention is to provide an apparatus which automatically attaches adhesive labels to objects successively supplied by a chute.

Another object of the invention is to provide an apparatus which permits the attaching of adhesive labels to a great number of objects within a predetermined time limit, and under the control of an unskilled operator.

With these objects in view, the present invention relates to an apparatus for attaching adhesive labels in which single labels are successively deposited upon a label-attaching means which is moved into an opening in a holder for an object to press the label with its adhesive face against the surface portion of the object covering the opening.

One embodiment of the invention comprises holding means for an object, such as a fruit, and having an opening covered by a surface portion of an object in the holding means; label-attaching means having a supporting portion located opposite the opening; means for depositing labels having adhesive surfaces successively on the supporting portion so that the adhesive face confronts the opening; and mounting means for mounting at least the label-attaching means for movement toward and away from the holding means between an inoperative position, and a label-attaching position in which the supporting portion and a label thereon are located in the opening of the holding means. Consequently, when the label-attaching means moves to the label-attaching position, the label on the supporting portion is pressed against the surface portion of the object covering the opening, and attached to the object.

In the preferred embodiment, the holding means is dished and located above the label-attaching means. The opening is provided in the bottom portion of the holding means, and is vertically aligned with the supporting portion of the label-attaching means. Consequently, the label-attaching means moves along a substantially vertical path to the label-attaching position.

Preferably, the mounting means mount also the holding means for movement toward and away from the label-attaching means between an inoperative position and an operative position. Operating means are actuated by the holding means in the operative position to move the label-attaching means to the label-attaching position, and to actuate the depositing means to place a label on the supporting portion of the label-attaching means.

The depositing means include guide means for guiding the web and labels adhesively attached to the bottom face of the web along a path in which deflector means are located adjacent the supporting portion of the label-attaching means for



deflecting successive portions of the web so that the label on the deflected portion is deposited on the supporting portion with its adhesive face confronting the opening in the holding means.

It is advantageous to provide a resilient cushion, which may consist of an elastomer foam, on the supporting portion, and provide the cushion with a concave surface matching the convex shape of an object, such as a bottle or fruit. The holding means is dished, and preferably lined with an elastic material to match the shape of the object. For apples, oranges and grape fruit, the holding means advantageously has the form of part of a sphere, while an elongated trough is used for bananas, cucumbers and bottles.

In one embodiment of the invention, the operating means, which is actuated by the holding means when the same are displaced by the weight of the object, or by manual pressure, include a switch, and an electromagnetic means for actuating the label-attaching means and the transporting means for the web carrying the labels.

In another embodiment, the operating means include mechanical linkages connecting the holding means with the label-attaching means and with the transporting means for the label-carrying web.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawing.

## BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a longitudinal sectional view illustrating a first embodiment of the invention;

FIG. 2 is a vertical sectional view taken on line II—II in FIG. 1;

FIG. 3 is a horizontal sectional view taken on line III—III in FIG. 1;

FIG. 4 is a vertical sectional view illustrating a second embodiment of the invention adapted for automatic operation; and

FIG. 5 is a fragmentary front view, partially in vertical section, illustrating a part of the apparatus shown in FIG. 4.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIGS. 1 to 3, labels 1 have adhesive faces with which they are attached to a carrier web 2 spaced the same distance from each other. A transporting slide 20, which will be described hereinafter in greater detail, stepwise moves the web 2 over guide means which include the deflector edge or roller 8 at which the web is deflected substantially 180° so that the adhesive labels separate from the web and are successively deposited on a supporting portion 10 in the form of an elastic cushion consisting of an elastomer foam. Only one label 1' is located at any time on the supporting portion 10, whereupon the label-attaching means 3, of which elastic cushion 10 is a portion, is moved upward to a label-attaching position in which supporting portion 10 is located in an opening 4 of a holding means 5 so that label 1' is pressed against the surface of an object 6 and attached to the same in a manner which will be described hereinafter in greater detail.

The elastomer foam cushion 10 assures that the label 1' is pressed with its entire adhesive face uniformly against the convex curved surface of the object 6. If the object has a curved surface having a small radius of curvature, for example, a small bottle, a lipstick and the like, it is advantageous to provide the elastic supporting portion 10 with a concave surface matching the curvature of the respective object 6 so that the edges of the labels are pressed against the object with the same force as the central portions of the labels.

The holding means 5 is a dished bowl or trough, depending on the shape of the object. When the objects are oranges,

lemons, apples, tangerines, grape fruits and the like, the dished holder 5 has the form of a partial sphere. For elongated objects, such as cucumbers or bottles, the holder is a dished partially cylindrical, trough. In order to prevent damage to soft fruit, such as pears, an elastic lining 11 is provided in holding means 5.

The holding means includes in addition to the dished holder 5, a pair of vertical posts 14 which are guided on opposite sides of the label-attaching means 3 in a supporting frame 9. Below label-attaching means 3, the guiding posts 14 are connected by a horizontal bar 15 which passes through an elongated slot 16 at one end of the longer arm of a double-armed lever 17 whose shorter arm 18 carries a stud 19. Lever 17 is mounted on pivot means 13 on the supporting frame 50 of the machine.

At the end of lever arm 18, a stud 19 is mounted which is guided in a slanted slot 22 in a clamping slide 20 which is guided in slot 21 of supporting frame and housing 50 and is operated by lever 17 to reciprocate.

Downward movement of holding means 5 with post 14 and bar 15 causes turning of lever 17 about pivot 13 so that stud 19 moves upward and displaces transporting slide 20 to the left as viewed in FIG. 1. When holding means 5 is moved upward, the motions are reversed, and transporting slide 20 is moved to the right as viewed in FIG. 1.

Transporting slide 20 has a clamping member 24 mounted on a pivot 23 and having a free end with an elastic clamping bar 25. Web 2 with label 1 is guided under the top plate 20*a* of transporting slide 20 but above clamping bar 25 of clamping means 24, and due to the slanted position of clamping means 24, the web is clamped during movement of transporting slide 22 to the right, and released during movement of transporting slide to the left. Consequently, web 2 is transported by transporting slide 20 when holding means 5 moves from the lower operative position to the upper inoperative position.

A second clamping means 28 is mounted by pivot 27 on the supporting frame 50 and is positioned to claim web 1 while transporting slide 20 is moved to the left, so that web 2 is not transported while holding means 5 moves downward to its operative position and effects movement of transporting slide 20 to the left as viewed in FIG. 1.

Transporting slide 20 and its top plate 20*a* is guided in a housing part 29 which is mounted on a housing wall 30 for angular movement, or generally detachable. The lower ends 22 of the guide slots of transporting slide 20 are opened, so that studs 19 of lever 17 can move out of slots 22 when housing part 29 with transporting slide 20 is detached, or folded back for the purpose of servicing or repairing the transporting slide 20.

Label-attaching means 3 is mounted in housing portions 9 for upward movement in slanted slots 40, and is supported by the shorter arm 41 of a double-armed lever 42 which is mounted on the supporting frame by means of a pivot 43. The longer arm 44 of support lever 42 has a position of rest in which it abuts a stop 45 on housing portion 91 due to the action of a spring 46 which is attached at its upper end to label-attaching means 3, while the lower end of spring 46 is secured to a rod 88 having a threaded end portion secured to the bottom plate 31 of the housing. Engaging portion 49 of lever arm 44 is located between stop 45 and wall 30 of the housing, and stop 45 is positioned so that the top face of engaging portion 49 is flush with the upper edge of housing wall 30 of housing 50. Engaging portion 49 is located opposite a roller 48 mounted on a pivot 54 of a projecting portion 47 of holding means 5. When holding means 5 is pressed downward by manual pressure on the object 6, roller 48 engages engaging portion 49 and turns support lever 42 in counterclockwise direction so that the roller 51 on arm 41 urges label-attaching means 3 with the elastic support portion 10 upward until the raised supporting portion 10 with a label 1' thereon abuts the surface portion 6*a* of the object 6 covering the opening 4 in holding means 5. The axes of support lever 42, of roller 54, and of roller 51 are parallel and substantially horizontal.

Directly above the elastic supporting portion 10 of label-attaching means 3, and slightly above the top surface of support portion 10, a device 55 for guiding the label 1' at the moment of transfer from the web 1 to the supporting portion 10 is provided. As also shown in FIGS. 2 and 3, the guiding device 55 has two guide members 55 which include an angular lever mounted on pivot screws 56, and projecting wings having slanted guide edges 57. The wings are made of a material to which the adhesive used on the labels 2 does not adhere when the guide edges 57 engage the edges of labels 1' separating from web 2 due to the deflection obtained by the deflecting means 8. Guide edges 57 extend from the ends of the deflecting roller 8 toward each other, and guide the labels successively to the top face of the supporting portion 10. During the transport of the web with the labels, the wings of guide members 55 are located above the top surface of supporting portion 10, and prevent that the label separating from web 2, but still adhering with its trailing edge to the web, folds back onto web 2 with the adhesive face downward.

The slanted guide edges 57 are particularly useful for guiding round, square, or rhomoid labels which are centered while separating from the web so that the label 1' always has the same position on the supporting portion 10.

As best seen in FIG. 1 and 3, the upper portions of guide posts 14 are provided with camming edges 59. When holding means 5 is pressed downward, camming edges 59 engage lever arms 60 which are connected with guide members 55 and move the wings of guide members 55 away from each other, while springs 86 are tensioned. Shortly before label-attaching means 3 is moved upward due to the action of holding means 5 on support lever 42, guide members 55 are spaced sufficiently to permit support portion 10 and label-attaching means 3 to move between the wings and guide edges 57 upward toward the opening 4 in holding means 5.

Guide members 55 can also be manually separated, since the ends 60' of lever arm 60 project laterally out of walls 30, see FIGS. 2 and 3, so that manual pressure on portions 60' effects separation of the guide members, which is advantageous when a new web 1 with labels 2 is to be threaded into the apparatus.

The end of a new web 1 is inserted into a channel between two guide plates 65 until the leading end of the web is located under the deflecting roller 8, and above the top face of the elastic support portion 10. A few labels 1 are detached from web 2, and the same is guided over a guide roller 66 and an adjustable roller 67 and through the channel 68 under top plate 20*a* of transporting slide 20 until the web projects out of the channel 69 in the movable housing portion 29. At the beginning of the operation, no labels are attached to the web between the deflector roller 8 and the leading end of web 2 in channel 69.

While the web 1 with label 2 is inserted into channel 65 and bent 180° about the deflector roller 8, the guide members 55 are manually held in a spaced position so that they do not obstruct the threading in of the web. Clamping means 24 and 28 open automatically during movement of the newly inserted web 2 to the right as viewed in FIG. 1.

Web 1 with labels 2 is supplied from a supply reel, not shown, mounted on an arm 95 secured to housing wall 30. Between the supply reel and the channel 65, a roller 70 engages the web. Roller 70 is rotatably mounted on a lever arm 72 having a slot 74. A supporting journal 71 passes through slot 74 so that lever arm 72 is movable in longitudinal direction, but can also be turned with roller 70. Lever arm 72 is pivotally connected with an angular lever 75 which turns about the pivot 76 on housing 50. The other end of angular lever 75 is connected with the end of a long angular lever 77 mounted on housing 30 by means of a pivot 78. The end of lever 77 has a slot in which the bar 15, connecting posts 14 of holding means 5, is located so that downward movement of holding means 5 effects outward movement of guide roller 70 whereby a loose loop is formed between the supply reel, not shown, and the entrance opening of channel 65.

When holding means 5 moves again upward to the inoperative position, transporting slide 20 is moved by lever 17 to the right, as viewed in FIG. 1, in a transporting direction so that the label on the deflected portion of the web is deposited on the top surface of supporting portion 10 in the position 1'. The transporting step of the web takes up the slack of the web loop formed by the guide roller 70. Consequently, the transporting slide 20, 20*a*, 24 does not have to pull the web off the supply reel, not shown, and can move the web precisely in equal steps corresponding to the spacing of the labels on the web. Since the forces acting on web 2 during the transporting step are small, the force acting on the deflecting roller 8 is also small. A small leaf spring 18 secured to the lower part of guide means 65, presses the web 1 against the upper part of the same so that the web is slightly braked and is slightly tensioned during passage through the apparatus.

Adjustment roller 67 is mounted on a journal 82 which is guided in a vertical slot 83 of housing wall portion 84, and can be secured in adjusted positions by manually operated screw 85, as best seen in FIG. 3. By adjustment of the position of adjusting roller 67, the length of web 2 between deflector roller 8 and clamping bar 25, can be adjusted for placing the label, approaching deflector roller 8, in the correct position.

The embodiment illustrated in FIGS. 1 to 3, which is advantageously used for labelling oranges, operates as follows:

During the checking, and before the crating of the oranges, each orange 6 is manually pressed into the lined dished holder 5 so that the same moves from the illustrated inoperative position to an operative position about one and a half inches downward to an operative position in which the label 1' on the top face of the elastic support portion 10 is pressed against the surface portion 6*a* of the orange covering the opening 4 into which support portion 10 enters.

While holding means 5 moves downward, first levers 17 and 77 are turned in counterclockwise direction by bar 15. When the holding means 5 reaches its operative position, actuating means 47,48 engage portion 49 of lever 42 so that the same lifts label-attaching means 3 with supporting portion 3. The camming edges 59 of posts 14 act on lever arms 60 of the guiding device 55 in the transporting direction of web 2.

During the downward movement of the holding means 5, the following operations take place:

a. Due to the counterclockwise turning of the lever 17, a torsion spring 12 on pivot 13 having an arm engaging lever arm 18, is tensioned, and due to the upward movement of stud 19, transporting slide 20 is moved to the left opposite to the transporting direction of web 2.

b. Guide roller 70 is operated under control of the linkage 77,75,72 to move to the right as viewed in the drawing, so that a loop is formed in web 1, and a web portion is unwound from the supply reel, not shown.

c. The lever arms 60 of the guide members 55 are displaced by the camming edges 59 so that the wings of guide members 55 move apart and out of the path of movement of supporting portion 10.

d. The engaging portion 49 of lever 42 is pressed downward by roller 48 on holding means 5 so that roller 51 moves the label-applying means 3 with support portion 8 upward against the action of spring 53 which is tensioned while label 1' is pressed against the surface portion 6*a* of orange 6 which still is pressed against the lowered holding means 5.

After this short downward movement of holding means 5 during which a label was attached to the orange, the operator takes the orange away from the holding means 5, whereupon the following operations automatically take place:

e. The tensioned spring 46 retracts label-attaching means 3 with elastic supporting portion 10 downward to the initial position shown in FIG. 1. Support lever 42 is clockwise turned until arm 42 abuts stationery stop 45.

f. At the same time, the tensioned spring 12 turns lever 17 in clockwise direction so that bar 15 with post 14 and holding means 5 is raised to the inoperative position of rest shown in FIG. 1. Turning of lever 17 effects downward movement of stud 19 from the upper portion to the lower portion of slot 22 so that transporting slide 20 is moved to the right in the transporting direction in which clamping means 24,25 is effective to press web 2 against the bottom face 26 of top plate 20*a* so that transporting slide 20 transports web 2 one step whereby a label 1 reaches deflector roller 8.

g. The camming edges 59 move upward and permit lever arms 60 of the guiding members 55 to move toward each other under the action of springs 86 so that guide members 55 assume again the initial position shown in FIG. 3, before the web is transported by transporting slide 20 so that guide members 55 guide the next following label on the portion of the web engaged by deflector roller 8, to the correct position on the top face of supporting portion 10.

h. The upward movement of holding means 5 with bar 15 also effects turning of lever 77 so that guide roller 70 is retracted before the transporting stroke of transporting slide 20 during which the slack of web 1 between the supply reel, not shown, and the entrance opening of guide channel 65 is taken up.

i. During the transporting stroke of transporting slide 20, a label 1 peels off web 2 in the region of the deflector roller 8, engages with its leading edge the slanted guide edges 57 of guide members 55, and drops, with its adhesive face facing upward, onto the top face of the elastic supporting portion 10.

Due to the actions of springs 46 and 12, all parts of the apparatus have returned to the initial position, so that another orange can be manually placed on the dished holder 5.

The above-listed operations take place within between ½ second and 1 second so that 60 to 100 objects can be provided with labels within 1 minute.

Due to the high speed of the apparatus, the labels separate from the web 2 at high speed in the region of the deflector roller 8. In order to assure that every label 1' is placed in the same position on the top face of supporting portion 10, so that it can be placed on surface portion 6*a* of the object 6, an abutment bar 90 is provided on the side of supporting portion 10 remote from deflector roller 8. The abutment bar 90 projects about one to three millimeter over the top face of support portion 10 on which the label 1' is deposited. Since support portion 10 and its abutment bar 90 consists of foam rubber or synthetic foam material, abutment bar is pushed outward when support portion 10 is pressed against the object 6. In order to facilitate the movement of abutment bar 90 away from deflector roller 8, while a label 1' is pressed by support portion 10 against the object 6, between support portion 10 with abutment bar 90 and the adjacent housing wall portion 91, a gap is provided which is bridged by a lip 93 of the elastic support portion 10.

The dished holding means 5 is detachably attached to guide posts 14, and can be easily exchanged for a differently shaped holding means, depending on the shape of the objects which are to be labelled.

The embodiment illustrated in FIGS. 4 and 5 can be automatically operated. The holding means 5' which has a cylindrical shape, is located between an upper chute 100 and a lower chute 100*a* so that round objects such as oranges and balls roll, and cylindrical objects such as bottles or cans, slide along chute 100 and are received by holding means 5' which is a portion of a lever 104 mounted on a pivot 101 and biased by spring 102 to a normal inoperative position of rest. When an object 6 rests on holding means 5', lever 104 turns against the action of spring 102 so that the button 105 on lever 104 engages the actuator of a switching device 106 which is connected with an electromagnetic means 110 so that the same upon downward displacement of holding means 5', operates a control member 112 which turns about a pivot 111 to engage with a ring-shaped portion, the object 6, which is stopped on holding means 5', and cannot roll down the chute 100*a*. Switching device 106 contains another control switch which is normally closed, and opened by member 104,105 to deenergize an electromagnet 115 which normally holds label-attaching means 3 with elastic support portion 10 in a lower in-

operative position against the action of the spring **116** which abuts a threaded disc **117** by which the tension of spring **116** can be adjusted.

When electromagnet **115** returns label-attaching means **3,10** with the rod **3***a* to its initial position, rod **3***a* operates the actuator of switch **123** by which another electromagnet **120** is energized to attract its armature.

In the inoperative position of the apparatus, electromagnet **115** holds label-attaching means **3** against the action of spring **116** in the lower inoperative position. When the circuit of electromagnet **115** is interrupted by the switching device **106** controlled by an object on holding means **5'**, electromagnet **115** is deenergized, and spring **116** raises the label-attaching means **3** with the elastic supporting portion **10** and label **1'** to a position located in the opening **4** and attaching label **1'** to the object **6**. The pressure exerted on the object **6** can be adjusted by adjustment of the spring tension by member **117**. When holding means **5'** is raised by spring **102** after release of object **6** by the control arm **112**, electromagnet **115** is energized and lowers the label-attaching means **3** to its normal inoperative position whereby switch **123** is operated to energize electromagnet **20** whose armature operates the pawl **125**, pressed by spring **126** against pins **127** of a wheel **121** by which the web **2** is transported about guide rollers and a deflector means **8** which may be a sharp edge or a thin roller. A roller **122** cooperates with transporting wheel **121** so that web **2** is stepwise transported distances corresponding to the spacing of two labels **1** on the same. The web **2** with labels **1** adhering thereto is supplied from a supply reel **131**.

A guiding device **155** for guiding the labels separating from the web in the region of the deflector means **8**, includes a pair of guide members **55'** mounted on pivots **129** for movement toward and away from each other. Links **128** connect guide members **55'** with the rod **3***a* to which the label-attaching means **3** with the elastic supporting portion **10** are secured. When the action of the spring **116** moves the label-attaching means **3** with supporting **10** upward, guiding members **55'** move apart and out of the path of movement of supporting portion **10**, but in the inoperative low position of the label-attaching means **3**, wing portions of guide members **55'** are located directly above the top surface of the elastic supporting portion **10** so that the label is reliably guided onto the top face of the supporting portion **10** and cannot again assume a position adhering to the web.

The slanted ring of lever arm **112** not only holds the object **6** on holding means **5'** during the attachment of the label, but also exerts a certain pressure on object **6** so that the same cannot be lifted off control means **5'** by the pressure of the operative label-attaching means **10**, and sufficient pressure is created for attaching the label to the object **6**.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of label-attaching apparatus differing from the types described above.

While the invention has been illustrated and described as embodied in an apparatus including label-attaching means and object-holding means moving toward each other to a label-attaching position when the holding means for the object is downwardly displaced by manual pressure or the weight of the object, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.

I claim:

**1.** Apparatus for attaching adhesive labels, comprising holding means including a concave holding dish curved about at least one axis and having a bottom portion formed with an opening adapted to be covered by a surface portion of a round object in said holding dish; label-attaching means having a supporting portion including an elastic cushion located under said opening vertically aligned with the same and adapted to assume the curvature of said surface portion of said object; label-depositing means for successively depositing labels having adhesive top surfaces on said elastic cushion; mounting means for mounting at least said label-attaching means for up and down movement of said elastic cushion toward and away from said holding dish between an inoperative position and a label-attaching position in which said elastic cushion and a label thereon are located in said opening; and operating means for moving said label-attaching means to said label-attaching position so that said elastic cushion yieldingly presses the entire adhesive top surface of said label against said surface portion when the object is held on said holding dish whereby said label is attached to said round object.

**2.** Apparatus as claimed in claim **1** wherein the surface of said elastic cushion is concave and adapted to match the curvature of the object.

**3.** Apparatus as claimed in claim **1** wherein said holding means includes an inner elastic lining for resiliently supporting the object, and wherein said opening is formed in said holding dish and in said elastic lining.

**4.** Apparatus as claimed in claim **1** comprising supporting frame means having guide slots, and wherein said label-attaching means has parts guided in said guide slots for movement at an angle to a vertical direction between said inoperative and label-attaching positions.

**5.** Apparatus for attaching adhesive labels, comprising holding means having an opening adapted to be covered by a surface portion of an object in said holding means; label-attaching means having a supporting portion located opposite and aligned with said opening; stepwise movable label-depositing means for successively depositing labels having adhesive surfaces on said supporting portion in a position in which the adhesive surface of the label on said supporting portion confronts said opening; mounting means for mounting said label-attaching means for movement toward and away from said holding means between an inoperative position and a label-attaching position, and for mounting said holding means for movement toward and away from said supporting portion between an inoperative position, and an operative position in which said supporting portion of said label-attaching means in said label-attaching position is located in said opening for pressing said label against said object; and operating means including biassing means for urging said holding means and label-attaching means to said inoperative positions, said operating means operatively connecting said holding means with said label-attaching means and with said label-depositing means so that upon movement of said holding means with the object thereon to said operative position against said biassing means said label-attaching means is moved to said label-attaching position so that a label is attached to the object by said supporting portion, while upon removal of the object from said holding means, said biassing means actuate said label-depositing means to deposit a label on said supporting portion, and also return said operating means and label-attaching means to said inoperative positions thereof.

**6.** Apparatus as claimed in claim **5** wherein said operating means include control switch means actuated by said holding means in said operative position, first drive means for moving said label-attaching means between said inoperative and label-attaching positions, and second drive means for moving said label-depositing means, said first and second drive means including first and second electric means, respectively, electrically connected with said switch means and actuated by the actuated switch means.

**7.** Apparatus as claimed in claim **6** wherein said first and second electric means are first and second electromagnetic means; wherein said first drive means include a first spring for moving said label-attaching means to said label-attaching position; wherein said first electromagnetic means hold said label-attaching means in said inoperative position until deenergized by said actuated control switch means; and wherein said second electromagnetic means is energized by said switch

means and moves said web one step when said label-attaching means is in said inoperative position and said first electromagnetic means is energized by said switch means.

8. Apparatus as claimed in claim 6 comprising an upper chute and a lower chute between which said holding means is located so that objects move from said upper chute to said holding means and move the same to said operative position whereupon said objects move down the lower chute after attachment of said labels, respectively.

9. Apparatus as claimed in claim 8 including presser means for pressing an object on said holding means against the same; and electromagnetic means controlled by said switch means for actuating said presser means.

10. Apparatus as claimed in claim 5 wherein said depositing means includes guide means for guiding a web and said labels adhesively attached to said web along a path, and deflector means located adjacent said supporting portion in said inoperative position for deflecting successive portions of said web so that the label on the deflected portion is deposited on said supporting portion.

11. Apparatus as claimed in claim 10 comprising a supporting frame means; wherein said operating means include a support lever mounted on said supporting frame means for angular movement and supporting said label-attaching means, said support lever having a free portion engaged by said holding means in said operative position for moving said label-attaching means to said label-attaching position; wherein said operating means include transporting means for stepwise transporting said web, linkage means connecting said holding means with said transporting means and including a spring so that said web is transported one step by said spring when said holding means moves to said inoperative position, and spring means acting on said label-attaching means for urging the same to said inoperative position when said holding means is moved to said inoperative position thereof by said biassing means.

12. Apparatus as claimed in claim 11 wherein said transporting means include a transporting slide having clamping means operative in a transporting direction for clamping said web, and being inoperative in the opposite direction; wherein said holding means includes two posts guided in said supporting frame means for guiding said holding means between said inoperative and operative positions, and a bar connecting said post; and wherein said linkage means includes a lever mounted on said supporting frame means and having at one end a slot in which said bar is located and at the other end a stud; and wherein said slide has a portion formed with a slanted slot in which said stud is located.

13. Apparatus as claimed in claim 12 wherein said supporting frame means include a movable housing portion on which said slide is mounted; and wherein said slanted slot in said slide is open at one end so that said stud moves out of said slot when said housing portion is moved to an open position.

14. Apparatus as claimed in claim 10 including means for guiding said holding means and said label-attaching means along an upright path having a slanted end portion toward and away from each other so that said holding means moves between a higher inoperative position and a lower operative position; wherein the top face of said supporting portion supporting a label is located slightly below said deflector means and leads the same in said transporting direction; wherein said operating means include a support lever having a roller engaging a bottom face of said label-attaching means, and being displaced by said holding means in said operative position for moving said label-attaching means along said upright path to said label-attaching position and along said slanted end portion of said path in the region of said deflector means.

15. Apparatus as claimed in claim 10 wherein said supporting portion is an elastic cushion, and wherein said cushion includes an abutment bar on the side of said cushion remote from said deflector means for stopping a label on said cushion.

16. Apparatus as claimed in claim 15 wherein said elastic cushion has a resilient lip projecting from said cushion on said remote side.

17. Apparatus as claimed in claim 10 wherein said deflector means deflect said web an angle of substantially 180° so that a portion of said web moves the labels toward said supporting portion and another portion without labels moves away from said supporting portion substantially parallel to the top face of the same.

18. Apparatus as claimed in claim 10 comprising a guiding device including guide members movable between a first position located above said supporting portion closely spaced from each other for guiding a label from said deflecting means onto said supporting surface, and a second position located out of the path of movement of said supporting portion, and spring means urging the same to said first position; and wherein said holding means during movement to said operative position moves said guide members to said second position.

19. Apparatus as claimed in claim 18 wherein said guide members include wings, respectively having slanted guide edges for engaging edges of a label separating from the web; and wherein said guide members have manually operable portions.