Nov. 12, 1968 J. R. COLLIER ET AL 3,410,552

LABEL HANDLING DEVICE

Filed May 23, 1966 3 Sheets-Sheet 1

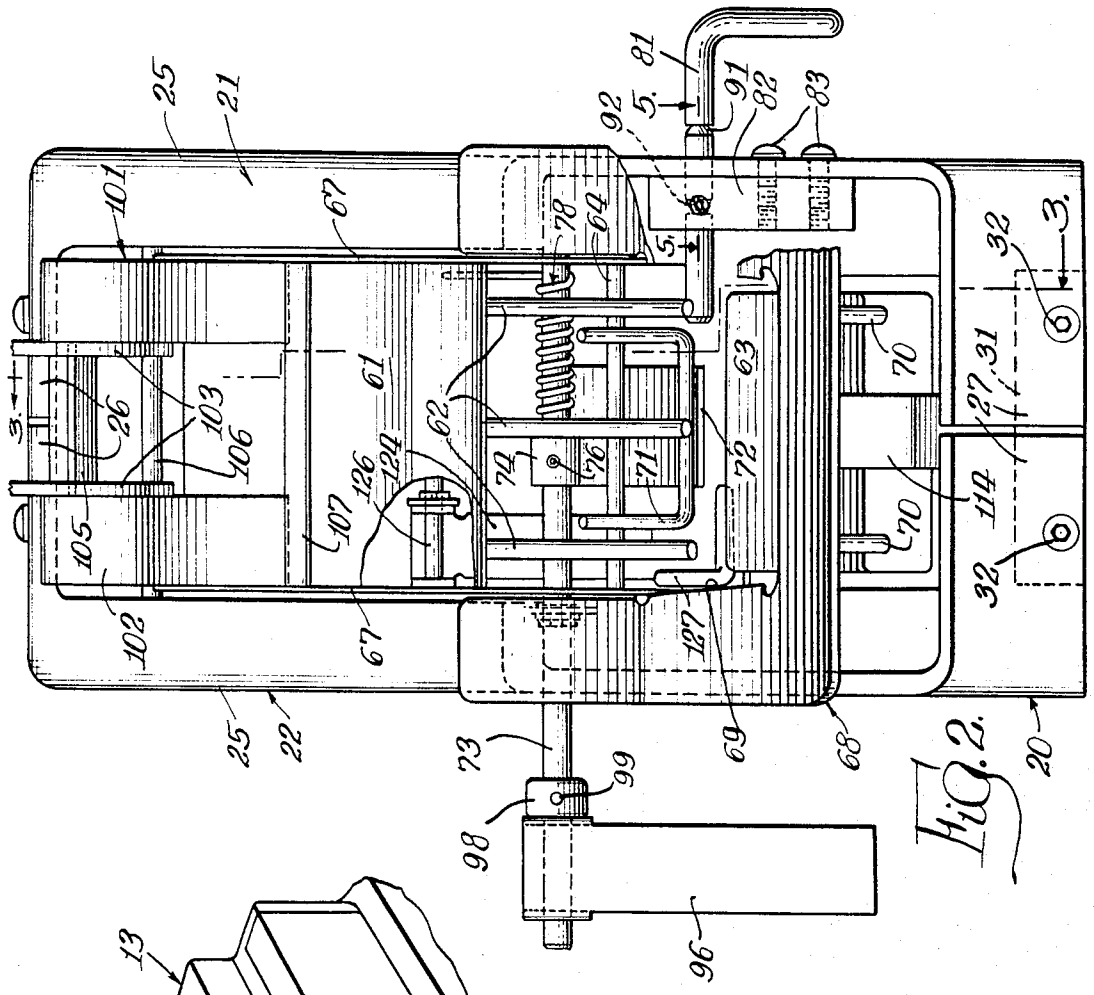


FIG. 2.

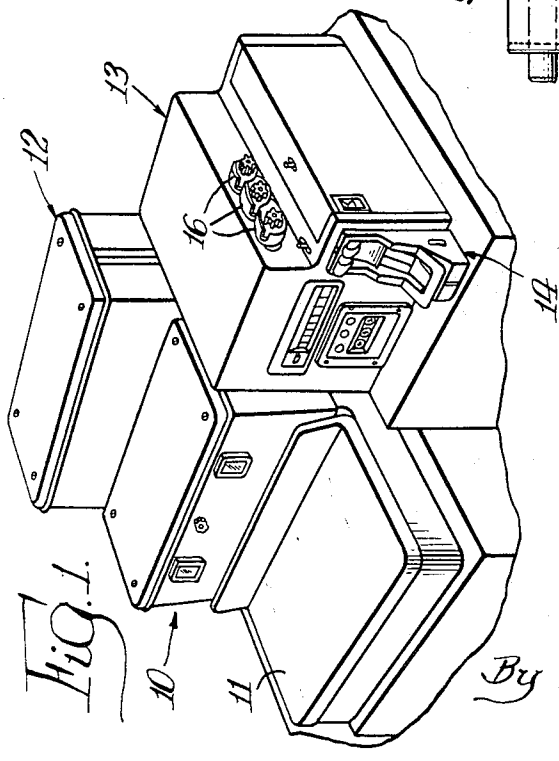


FIG. 1.

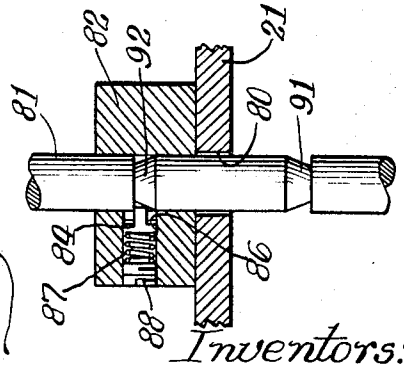


FIG. 5.

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LABEL HANDLING DEVICE

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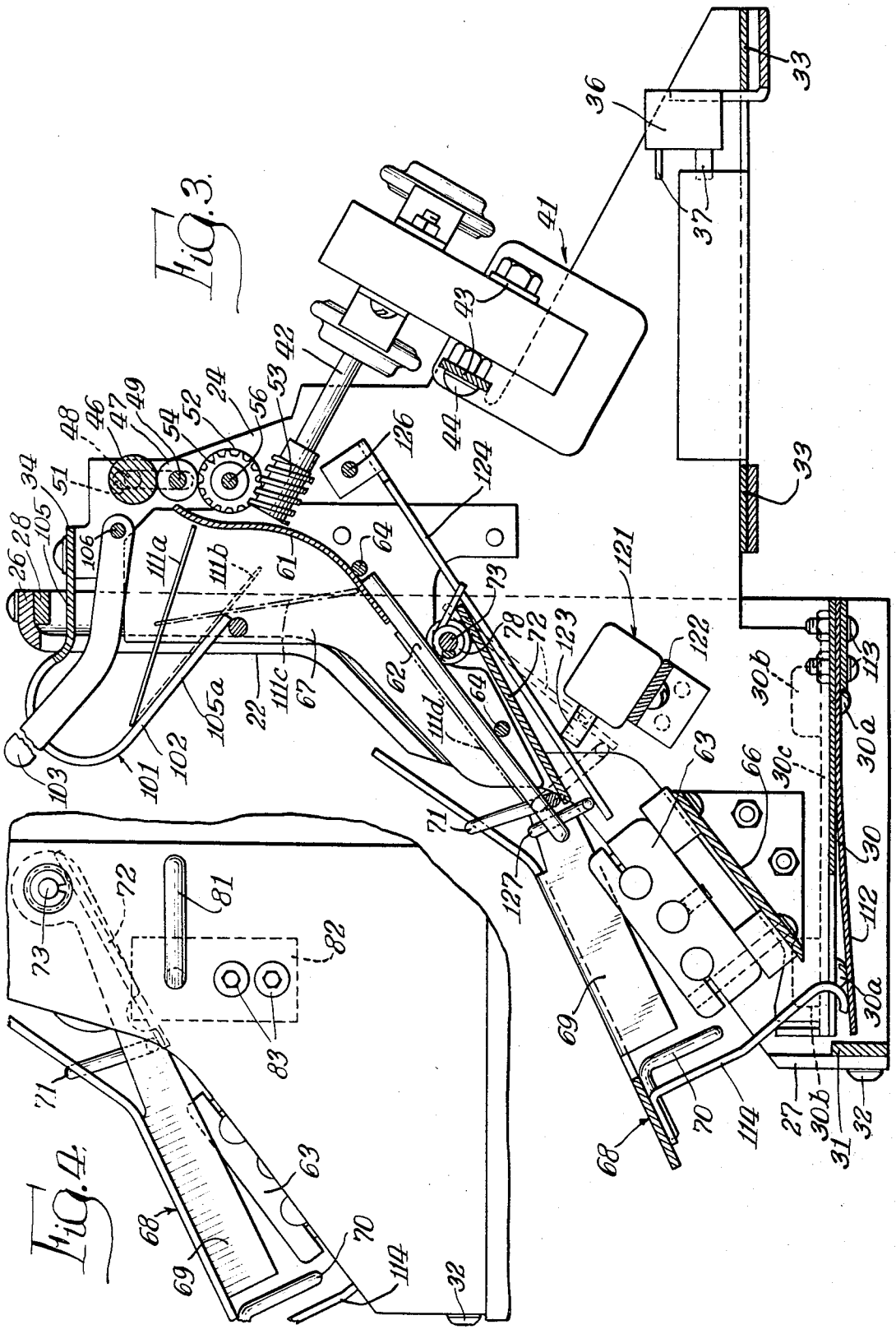


Fig. 3.

Fig. 4.

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LABEL HANDLING DEVICE

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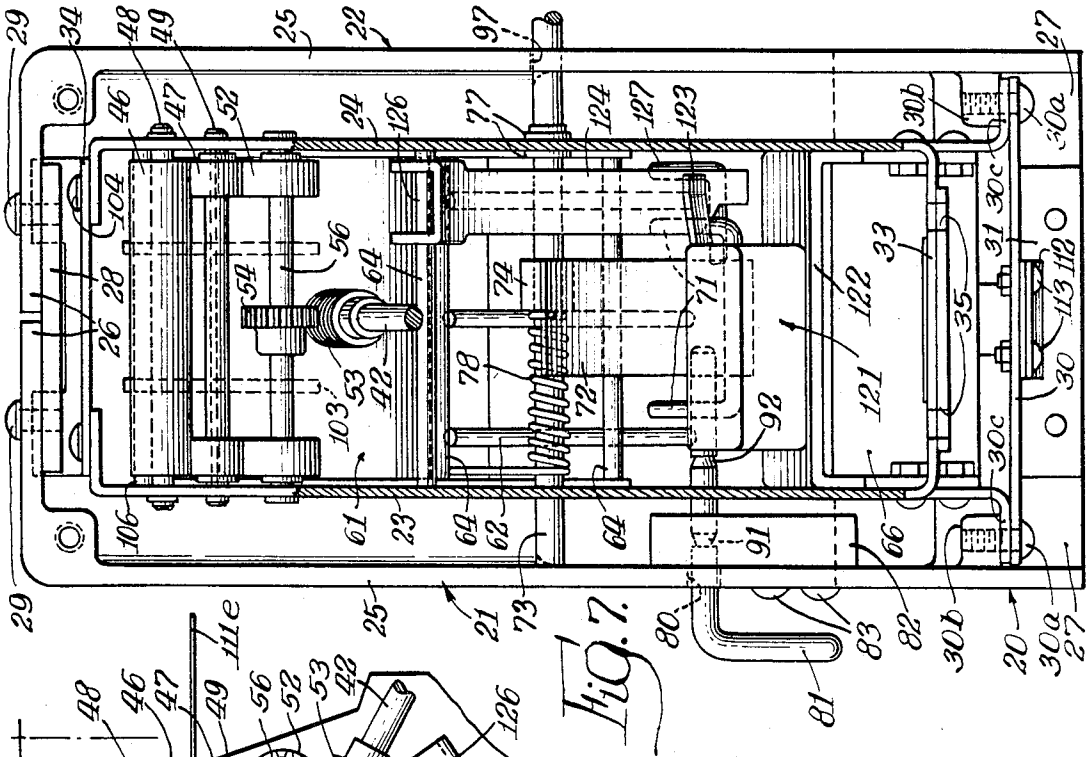


Fig. 7.

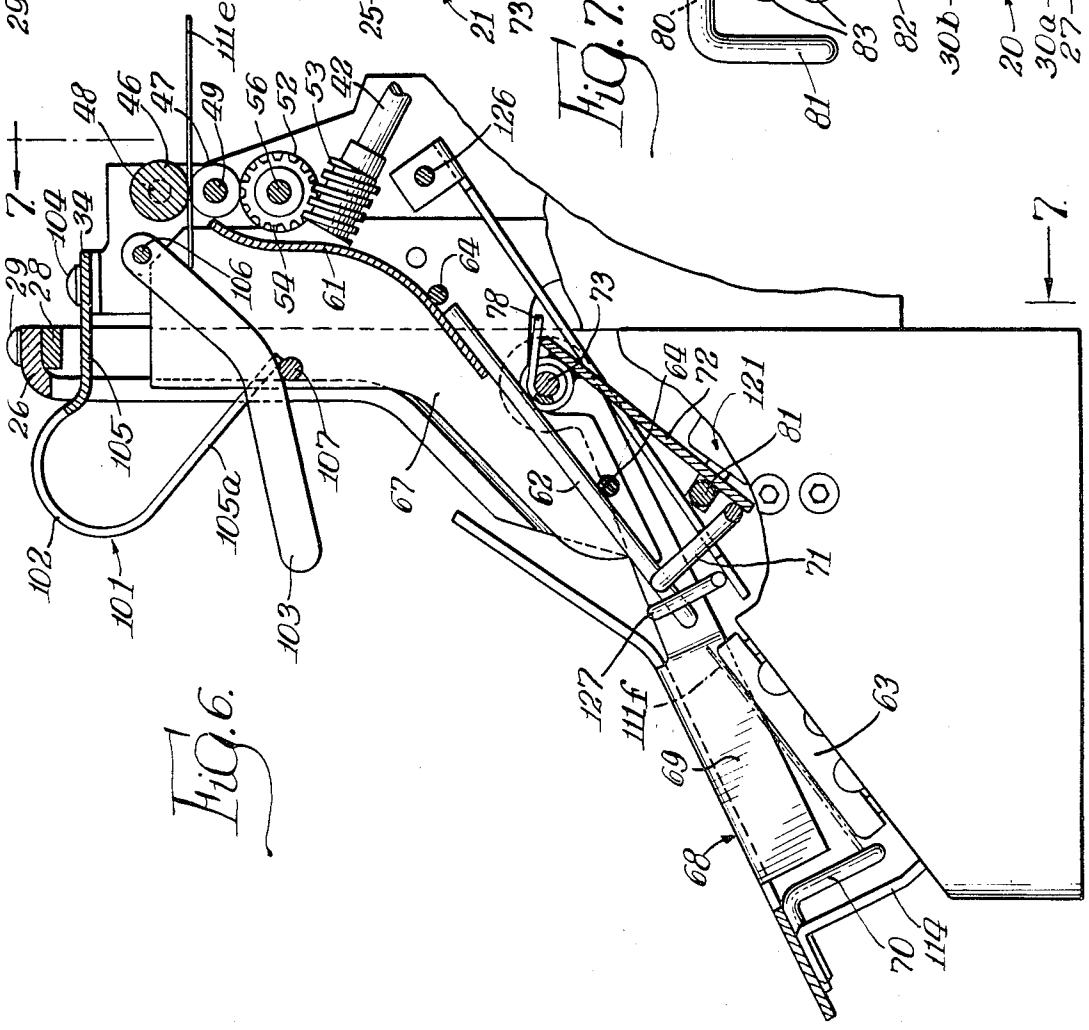


Fig. 6.

United States Patent Office 3,410,552 Patented Nov. 12, 1968

3,410,552

LABEL HANDLING DEVICE

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Filed May 23, 1966, Ser. No. 552,186
10 Claims. (Cl. 271—65)

ABSTRACT OF THE DISCLOSURE

This disclosure deals with a label handling device for use with a label printing mechanism of a scale, for example. The label handling device includes a downwardly inclined chute which receives printed labels at its upper end. Two retractable label stops are located along the length of the chute, thus forming two possible label holding positions, and a heater may be provided at one of the two positions. The device further includes an adjustable mechanism at the upper end of the chute, which is adjustable between one position where it inverts labels entering the chute and a second position where it directs labels into the chute without inverting them.

Disclosure

U.S. Patent No. 2,948,466 describes a system for weighing an article, computing the selling price of the article based on its weight and unit price, printing the selling price plus other information such as the weight and the unit price on a label, and issuing the label to a label handling device with the printed side of the label facing downwardly. The system is capable of performing a series of such operations and two different modes of operation are contemplated in the patent. In one mode of operation, the information is printed on the lower side of a label having a heat activated adhesive on its upper side. The label handling device includes a label chute and a heater, and the labels are momentarily held in the label chute on top of the heater by stops with the adhesive side facing upwardly. After the adhesive has been activated, the label is removed from the chute by means for applying it to an article. In the second mode of operation, a different label handling device is provided, which does not include a heater but does include means for turning the label over to place the printed side of the label facing upwardly before the label enters the chute. The label may or may not have an adhesive on its side opposite the printed side. Again, the device includes means to hold the label in the chute until it is removed by means for applying it to an article.

Copending patent application Ser. No. 363,955, in the name of Omar Hansen, Jr., describes an automatic transfer and labeling machine designed for use with a system of the type described in Patent No. 2,948,466. The transfer and labeling machine moves a succession of articles such as packages across the weighing platform of the scale of the system, and it includes a label pickup head which removes the labels from the label chute and applies them to the packages in the proper order. Labels having an adhesive backing are usually used, and the label pickup head is designed to pick up a label with its printed side facing upwardly, heat the label to activate the adhesive, and press the label on the top side of a package.

When used with the Hansen automatic transfer and labeling machine, the system disclosed in Patent No. 2,948.466 is preferably provided with the type of label handling device used in the second mode of operation described with regard to Patent No. 2,948,466, wherein the labels are inverted to place the printed side thereof facing upwardly. The use of the label handling device designed for the second mode of operation results in some inconvenience, however, because the system cannot then be used in the first mode of operation unless a different label handling device is provided.

Accordingly, it is an object of this invention to provide a label handling device for use in a system of the type described above, which may be used in both of the above two modes of operation.

Another object is to provide a label handling device of the above character, which may be easily and quickly converted from use in one mode of operation to use in the other mode.

Other objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying figures of the drawings, wherein:

FIG. 1 is a perspective view of a weighing, computing, and label printing system including a label handling device embodying the invention;

FIG. 2 is an enlarged front elevational view of the label handling device when adjusted for one mode of operation;

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2;

FIG. 4 is a still further enlarged, fragmentary elevational view of a portion of the label handling device;

FIG. 5 is a still further enlarged sectional view taken on the line 5—5 of FIG. 2;

FIG. 6 is a fragmentary view generally similar to FIG. 3 but showing the label handling device adjusted for a different mode of operation; and

FIG. 7 is a view taken on the line 7–7 of FIG. 6, showing the back of the label handling device.

In general, a label handling device embodying the invention is adapted to be installed in a system of the type disclosed in the above Patent No. 2,948,466 and be used with an automatic transfer and labeling machine of the type disclosed in the copending Hansen patent application Ser. No. 363,955. The label handling device comprises a downwardly incluined chute adapted at its upper end to receive labels from a label issuing device of the system. The device further includes first and second stops which are located along the length of the chute and are adapted to extend into the path of labels sliding down the chute, the first and second stops being respectively located to engage and hold the labels at first and second positions in the chute. When in one mode of operation, the labels are stopped at one of these positions and when in the other mode of operation the labels are stopped at the other position. The second stop is located upwardly along the chute from the first stop, whereby a label sliding down the chute may be engaged and held by the second stop. The second stop is adapted to be retracted out of the path of labels sliding down the chute and when the second stop has been retracted the label slides further down the chute to the first stop.

The label handling device further includes an adjustable label inverting means located adjacent the label issuing means and at the upper end of the label chute, the label inverting means being adjustable either to receive a label from the label issuing means, invert the label, and direct the label into the chute, or to direct the label into the chute without inverting it. The labels are inverted when in one mode of operation and they are not inverted when in the other mode of operation. The label handling device further includes a heater for heating a label to thereby activate an adhesive backing of the label if there is such a backing, the heater being located at one of the first and second positions along the chute and used when in one of the two modes of operation.

Assuming that the labels leave the label issuing means with the adhesive side up, the label handling device is set for operation with a transfer and labeling machine by adjusting the label inverting means to invert the labels and direct the labels into the chute, and the second stop is adjusted so that the labels sliding down the chute are stopped at the position which does not include the heater. In such operation, a label pickup head of the transfer and labeling machine described in the above referred to Hansen patent application, picks up each label with the adhesive side facing downwardly, heats the label as it is being transferred from the label chute to the package, and places the label on the package.

When it is desired to set the label handling device for the other mode of operation where the labels may be manually applied to the packages, for example, the label inverting means is adjusted to direct the labels into the chute without inverting them, and the second stop is adjusted to cause each label to be held at the position where it is over the heater. In such operation, each label is permitted to remain on the heater sufficiently long for the adhesive to be activated, and then the label is applied to a package as by manually lowering the package on top of the label chute and the label so that the package engages the label adhesive. The label then sticks to the package and remains on the package when the package is lifted off the label chute.

The label handling device is preferably also provided with means for retracting the first and second stops as the label is being picked up when in the respective modes of operation, and the device preferably also includes means for actuating a lock-out arrangement which is connected in the weighing and computing circuits of the system.

In greater detail, a system including a label handling device embodying the invention comprises a weighing mechanism **10** (FIG. 1) including a weighing platform **11**, computing apparatus **12** for computing the price of an article placed on the weighing platform **11**, the price being based on the weight of the article and the unit price of the article, a printing mechanism **13** which prints the computed information plus other information, such as identifying data, on labels, and a label handling device **14** which receives the printed labels from the printing mechanism **13**. The printer **13** may be provided with manual control knobs **16** which are used to set the printing and computing apparatus for the unit price of a series of articles being handled by the system.

With reference to FIGS. 2 to 7, the label handling device **14** comprises a frame **20** including right and left hand generally parallel housing sections **21** and **22**, respectively, and parallel right and left hand side plates **23** and **24**, respectively. An opening is formed in the housing of the printing mechanism, and the two housing sections **21** and **22** are adapted to be secured to the housing of the printing mechanism **13** around the opening, the two sections **21** and **22** and the plates **23** and **24** extending forwardly from the printer housing and the plates **23** and **24** also extending into the housing through the opening.

Each of the two sections **21** and **22** comprises a plate-like portion **25**, an upper portion **26** and a lower front portion **27**. The two upper portions **26** extend toward each other from the respective plate-like portions **25**, and are secured together as by a strap **28** and screws **29** (FIGS. 6 and 7). The two lower front portions **27** also extend toward each other and are secured together as by another strap **31** and screws **32**. The lower rear portions of the sections **21** and **22** are also secured together by another strap **30** and screws **30***a* (FIG. 7), bosses **30***b* being formed on the innersurfaces of the sections **21** and **22** for connection with the screws **30***a*. The screws **30***a* and bosses **30***b* also serve to secure the plates **23** and **24** to the sections **21** and **22**. As shown in FIGS. 3 and 7, outwardly extending flanges **30***c* are formed at the lower edges of the plates **23** and **24**, which are secured to the bosses **30***b* by the screws **30***a*. The two parallel side plates **23** and **24** are spaced inwardly from the two plate-like portions **25** of the housing sections **21** and **22** and are secured together at their lower ends as by suitable straps **33** (FIGS. 3 and 7) and at their upper ends by a strap portion **34** of a label inverting mechanism (to be described more fully hereinafter). Of course, the plates **23** and **24** are also secured together through the sections **21** and **22** and the strap **30**. The opening in the housing of the printing mechanism **13** for the label handling device generally corresponds to but is smaller than the configuration of the outer dimensions of the housing sections **21** and **22**, and the sections **21** and **22** of the label handling device cover the opening in the printer mechanism housing when the device is installed thereon. The device is secured to the printer mechanism housing by means of screws (not shown) which extend through holes formed in the housing and through slots **35** (FIG. 7) formed in the strap **33**.

Fastened to the strap **33** which connects the side plates **23** and **24** is an electrical connector **36** (FIG. 3) having prongs **37**. The connector **36** is adapted to be engaged by a suitable plug for connecting the electrical components of the label handling device to the electrical circuits of the printing and computing apparatus.

Also mounted between the two side plates **23** and **24** and supported thereby is a drive motor **41** (FIG. 3) having a drive shaft **42**, the motor **41** being secured to the side plates **23** and **24** by tabs **43** and screws **44**. The drive motor **41** is connected to rotate a pair of superposed feed rollers **46** and **47** (FIGS. 3, 6 and 7) which are mounted on laterally extending shafts **48** and **49**, respectively. The shafts **48** and **49** extend horizontally between the side plates **23** and **24** and their ends extend into vertically elongated slots **51** (FIGS. 3) formed in the two side plates **23** and **24**. The shafts **48** and **49** are vertically movable in the slots **51** a short distance relative to each other and to the side plates, and the rollers **46** and **47** are urged downwardly into engagement with each other by the force of gravity. The feed roller **46**, which is uppermost, is generally cylindrical and may be made of a relatively heavy material such as brass, and the feed roller **47** is preferably formed by two laterally spaced cylindrical sections which are made of a material such as rubber. The nip of the feed rollers **46** and **47** is located to receive labels from a set of ejector wheels and a track (not shown) of the printer mechanism **13**. The two laterally spaced sections of the roller **47** form an open space therebetween, and when the printing mechanism delivers a printed label with the freshly printed ink at the bottom side thereof, the laterally spaced sections of the roller **47** engage only the edges of the label and therefore do not smear the ink.

The feed rollers **46** and **47** are connected to the drive motor **41** by a drive roller **52**, which is mounted on a shaft **56**. The drive roller **52** is also formed by two laterally spaced sections which are aligned with and engage the two sections of the roller **47**. A worm **53** is secured to the outer end of the drive shaft **42** of the motor **41**, and meshes with a worm gear **54** secured to the shaft **56** at substantially the center thereof (FIGS. 6 and 7) between the two sections of the roller **52**. The shaft **56** is rotatably mounted on the side plates **23** and **24** below the feed rollers **46** and **47**, the roller **47** being gravity urged into engagement with the roller **52**. The direction of rotation of the drive motor shaft **42** and the configuration of the gears **53** and **54** is such that the drive roller **52** and the feed roller **46** are rotated in the clockwise direction as seen in FIGS. 3 and 6, while the other feed roller **47** is rotated in the clockwise direction. Thus, a label entering the nip of the feed rollers **46** and **47** from the right as seen in FIGS. 3 and 6 is engaged by the feed rollers **46** and **47** and moved to the left.

The drive motor **41** is preferably energized continuously and consequently the drive roller **52** and the feed rollers **46** and **47** also rotate continuously. The feed rollers **46**

and 47 are preferably rotated at a relatively fast rate, so that a label entering the nip as previously explained will be engaged by the feed rollers 46 and 47 and snapped toward the left as seen in FIG 3. The vertically elongated slots 51 in the side plates 23 and 24 permit the feed roller 46 to shift upwardly slightly when the label passes between the feed rollers.

Forwardly of the two feed rollers 46 and 47 there is provided a downwardly and forwardly inclined chute comprising an S-shaped slide 61 (FIG. 3), three parallel rods 62, and the upper surface of a label heater 63. The upper end of the slide 61 is positioned just forwardly and slightly downwardly from the nip of the feed rollers 46 and 47, and the lower end of the slide 61 overlaps the upper ends of the three rods 62. The upper ends of the downwardly and forwardly extending rods 62 are secured to the underside of the slide 61 and the slide 61 and the rods 62 are secured to two laterally extending rods 64. At their ends, the rods 64 are secured to two side guides 67 which in turn are fastened to the plates 23 and 24. The heater 63 is located downwardly and forwardly from the lower ends of the rods 62 and is secured to a laterally extending brace 66 (FIG. 3) which is secured to the side plates 23 and 24.

The upper surfaces of the slide 61, the rods 62 and the heater 63 are polished and are substantially flush, so that a label inserted into the chute at the top of the slide 61 may slide downwardly along the slide 61, along the three rods 62, and down to the heater 63. The side guides 67 (FIGS. 2 and 3) are parallel and are spaced apart a distance which is slightly greater than the width of the labels normally used, and guide the labels from the upper end of the slide 61 downwardly to nearly the forward ends of the three rods 62. Downwardly from the guides 67, the movement of a label sliding down the chute is controlled by a label retainer 68 which has a pair of laterally spaced, forwardly extending retainer portions 69 (FIG. 3) formed thereon. The two retainer portions 69 extend adjacent the sides of the heater 63 and serve to hold the label on top of the heater 63. The label retainer 68 also includes a laterally extending stop portion 70 which is located adjacent the forward side of the heater 63, in position to engage and stop labels on top of the heater 63.

In addition to retaining labels on top of the heater 63, the retainer 68 also serves as a guard around the heater 63 because it extends upwardly around the heater sufficiently far to prevent accidental touching of the heater 63.

When it is desired to use the weighing, computing and label printing system with an automatic transfer and labeling machine of the character described in the above mentioned Hansen patent application, it is preferred that the labels move down the chute of the label handling device with the adhesive side down and be prevented from reaching the heater 63, since the transfer and labeling machine includes a label pickup head which picks up the label, heats it, and applies it to a package. To prevent the labels from reaching the heater 63, a retractable U-shaped stop 71 (FIGS. 3 and 4) is provided. The center portion of the U-shaped stop 71 is secured to a leaf 72 as by welding. The leaf 72 has the stop 71 secured to the lower end thereof, and the leaf extends upwardly and rearwardly from the stop 71 to a laterally extending shaft 73 which is pivotably mounted on the frame 20. The leaf 72 is secured to the shaft 73 by means of a tubular member 74 which receives the shaft 73, the member 74 being secured to the plate 72 as by welding and being secured to the shaft 73 as by a set screw 76. As shown in FIG. 7, the shaft 73 extends through holes formed in the two side plates 23 and 24 and is prevented from moving along its axis relative to the side plates 23 and 24 by snap rings 77. The plate 72 and the stop 71 being pivotably mounted relative to the housing 20, they are urged in the clockwise direction as seen in FIG. 3 by a torsion spring 78 (FIGS. 2 and 7) which has one end anchored against the underside of the stationary slide 61 and its other end in engagement with the upper edge of the plate 72. Thus, the torsion spring 78 constantly urges the plate 72 in the clockwise direction to a position where the arms of the stop 71 extend upwardly between the rods 62 and above the level of the rods 62. The extent of clockwise movement of the plate 72, and consequently the upper position of the stop 71 is limited by the centermost of the three rods 62, which extends over the top of the center portion of the U-shaped stop 71 and in position to be engaged by the stop 71 upon movement thereof.

When the stop 71 is in the upper position, shown in full lines in FIG. 3, the upper ends of the arms of the stop 71 extend above the upper level of the rods 62 and in the path of a label sliding down the chute. When it is desired to permit the label to slide all the way down to the heater 63, the stop 71 may be moved downwardly to a retracted position and held there by means of an angle shaped pin 81 (FIGS. 2 and 4). One end portion of the pin 81 extends through a hole 80 formed in the side of the housing section 21 and through a hole formed in the side plate 23. The pin 81 is mounted for movement along the axis of the inwardly extending end portion thereof by means of a block 82 which is secured to the inner surface of the housing section 21 by means of screws 83. The pin 81 extends through a hole formed in the block 82 which includes a detent arrangement for releasably holding the pin 81 at either of two adjusted positions. As shown in FIG. 5, a detent 84 is positioned in a hole 86 formed in the block 82 and is movable in a direction which is normal to the axis of the pin 81. The detent is urged toward the pin 81 by a compression spring 87, positioned between a screw 88 and the detent 84. Two annular grooves 91 and 92 are formed in the pin 81. For each groove 91 and 92, the side of the groove which is adjacent the other groove is slanted as shown in FIG. 5, while the other side of each of the grooves extends substantially radially. Thus, the detent 84, limits the extent of movement of the pin 81 to the distance between the two grooves 91 and 92, and when the detent is in one of the two grooves, it holds the pin in that position.

As shown in FIG. 2, when the pin 81 is pulled outwardly to place the innermost grooves 92 adjacent the detent 84, the inner end of the pin 81 is out of engagement with the leaf 72. Consequently, the pin 81 when in this position does not prevent movement of the stop 71. However, when leaf 72 is pivoted to move the stop 71 to its retracted position, the pin 81 may be pushed inwardly to place the groove 91 in engagement with the detent 84, at which position the inner end of the pin extends over the top of the plate 72, as shown in FIGS. 6 and 7, and holds the stop 71 in the retracted position. When the pin 81 is pulled out to the position shown in FIG. 2, the torsion spring 78 pivots the plate 72 and returns the stop 71 to the extended position where the arms of the stop 71 lie in the path of labels sliding down the rods 62.

When using the label handling device in conjunction with an automatic transfer and labeling machine of the character described in the above mentioned Hansen patent application, the stop 71 is placed in the upward position where it extends into the path of a label sliding down the chute and holds it until a label pickup head of the transfer and labeling machine picks up the label. However, it is also desirable to have the stop 71 retracted each time that the label pickup head picks up a label, and to this end, a lever 96 (FIG. 2) is secured to one end of the shaft 73 and in a position to be engaged by the mechanism which carries the label pickup head, as a label is being picked up. The shaft 73 extends beyond the frame 20 on the opposite side of the device from the pin 81, through a hole 97 formed in the housing section 22, and the lever 96 includes a tubular portion 98 which is positioned over the end of the shaft 73 and is secured thereto as by a set screw 99. As shown in FIG. 2, the lever 96 extends substantially downwardly from the shaft 73, and when the mechanism which carries the pick-up head swings the

pick-up head over to pick up a label, it engages the lever **96** adjacent its lower end and pushes the lower portion of the lever **96** rearwardly. Consequently, the shaft **73** is rotated in the counter-clockwise direction as seen in FIG. 3 and the stop **71** is retracted.

When the labels are to be manually applied to the packages, the device is adjusted, as will be explained later, to cause the labels to enter the chute with the adhesive side facing upwardly. Further, the stop **71** is placed in the retracted position and held there by manually turning the lever **96** and pressing the pin **81** inwardly to the position where its inner end overlies the plate **72** (FIG. 7). Thereafter, a label sliding downwardly along the rods **62** will pass over the top of the stop **71** and move on to the heater **63**. The label will slide downwardly until it engages the stop portion **70** of the label retainer **68** and will be held thereby over the heater **63**, as shown by the dash dot representation of a label indicated by the numeral **111f** of FIG. 6. The label retainer **68** is generally U-shaped when viewed from the above. The inner edges of the arms of the U are bent downwardly to form the retainer portions **69**, and the stop portion **70** is secured to the underside of the center of the U and extends downwardly therefrom.

The upper surface portions at the sides of the guard **68** project rearwardly and overlie the upper edges of the housing sections **21** and **22** adjacent the rods **62**.

The retainer **68** is pivotally mounted on the frame of the device so that the portions of the retainers around the heater **63** may be moved downwardly when a label is being picked up. Thus, the portions **69** of the retainer **68** are spaced laterally inwardly from the side of the housing sections, and the rearward ends are pivotally mounted on the frame **20** by the laterally extending rod **73** which also pivotally carries the stop **71** (FIGS. 4 and 6), and thus the retainer **68** may be pivoted on the axis of the shaft **73**. When the forward end of the retainer is pressed downwardly, the upper level of the retainer are substantially flush with the upper level of the heater **63**. Thereafter, when pressure on the retainer **68** is released, the retainer is returned in the clockwise direction as seen in FIG. 3 by a leaf spring **112** (FIG. 3) which is secured to the frame through the strap **30** by screws and nuts **113**. A member **114** is secured to the underside of the center portion of the retainer **68** and extends downwardly and rests on the forward end portion of the leaf spring **112**. Thus, downward movement of the forward end of the retainer **68** bends the forward end portion of the leaf spring **112** downwardly and when pressure on the retainer **68** is released, the spring **112** returns the retainer **62** to the upper or normal position shown in FIGS. 3 and 6.

When operating in the manual mode, a label is inserted into the chute by the feed rollers **46** and **47**, slides down the chute, and comes to rest on the heater **63**. An operator may apply the label to an article by picking up the article and then moving the article downwardly until it comes to rest on the top of the label handling device. The weight of the article causes the retainer **68** to swing downwardly about the axis of the shaft **73** so that the article may engage the label, and the article is permitted to rest momentarily on top of the label. The label remains on the heater **63** sufficiently long for the label adhesive to be activated, and the adhesive causes the label to adhere to the article. When the article and the label are lifted upwardly, the leaf spring **112** returns the retainer **68** to the upper position.

As stated previously when the label passes through the feed rollers **46** and **47**, its printed side faces downwardly and its adhesive side faces upwardly. Since it is desirable to have the adhesive side of the label facing upwardly when it is permitted to move downwardly to the heater **63**, and to have the adhesive side of the label facing downwardly when the label is retained by the stop **71**, an adjustable label inverting mechanism **101** is provided either for inverting the labels before directing the labels to the label chute or for directing the labels to the chute without first inverting them. The label inverting mechanism **101** comprises a member **102**, which is generally trough-shaped when viewed from the side (FIG. 3), and a pair of pivotally mounted fingers **103**. The fingers **103** are secured in laterally spaced relation to a shaft **106** which extends laterally between and is pivotally mounted on the side plates **23** and **24**. The member **102** includes upper and lower sides **105** and **105***a*, respectively, which extend rearwardly and downwardly from the center portion of the trough, the sides **105** and **105***a* forming the opening of the trough. The rearward end of the upper side **105** of the member **102** forms the strap portion **34** previously referred to, which secures the upper ends of the two side plates together by means of screws or rivets **104**. The lower side **105***a* of the member **102** comprises a pair of laterally space portions (FIG. 2), and the fingers **103** extend between these portions. The fingers are located such that they slidingly engage the inner edges of these two portions, such engagement holding the fingers **103** at a pivotally adjusted position.

As shown in FIG. 3, the lower side **105***a* extends into the path of a label leaving the feed rollers **46** and **47**. When the fingers **103** have been manually moved to the upper position shown in FIG. 3, a label moves into the trough opening and slides up the inner surface of the side **105***a*, and then slides downwardly due to the force of gravity after release from the feed rollers **46** and **47**. The rearward end of the side **105***a* is forwardly spaced from the upper end of the slide **61** so that the label is flipped over as it leaves the side **105***a* and drops on to the slide **61**.

To cause the labels to enter the chute with the adhesive side facing upwardly, the fingers **103** are manually pivoted to a lower position (FIG. 6) where they prevent the labels from entering the opening of the trough shaped member **102** and thereby being inverted. The two fingers **103** extend across the trough openings, and a label leaving the feed rollers **46** and **47** strikes the fingers and is deflected onto the slide **61** without being inverted.

In operation, assume that the labels are delivered by the printing mechanism with the printed side facing downwardly and the adhesive side of the label facing upwardly. To adjust the label handling device for use with the automatic transfer and labeling machine, the fingers **103** are moved to the upward position shown in FIG. 3 and the pin **81** is pulled toward the right as seen in FIG. 2 where it is out of engagement with the plate **72**. When a label is delivered to the rotating feed rollers **46** and **47** by the printing mechanism, the feed rollers **46** and **47** engage the label and snap it toward the left as seen in FIG. 3. This position of the label is indicated by the numeral **111***a*. The forward edge of the label slides upwardly along the lower side **105***a* of the member **102** and comes to a stop in a position indicated at **111***b*. Then, due to the inclination of the lower side **105***a* the label slides downwardly to a position indicated at **111***c* and the rearward edge of the label engages the slide **61** and the label is flipped over as it drops on to the slide **61**. The label then slides downwardly until it engages the upwardly extending arms of the stop **71** and is held thereby in a position indicated at **111***d*. Thereafter, a label pickup head (not shown) of the transfer and labeling machine moves to a position over the label at the position indicated at **111***d* and picks up the label with the adhesive side facing downwardly, heats the label in order to activate the adhesive, and applies the label to an article. The transfer and labeling machine also includes means for turning the lever **96** as the label is being picked in order to retract the stop **71** to the dashed line position shown in FIG. 3, where the stop cannot interfere with the operation of the label pickup head while it is picking up the label.

When the system is to be manually operated, the heater

63 is employed to heat the labels in order to activate the adhesive backing. Since a label is issued by the printer with its adhesive side facing upwardly and it is desirable to have the adhesive side of the label facing away from the heater it is not necessary to invert the label. Therefore, the fingers **103** are pivoted downwardly to the position shown in FIGS. 6 and 7 where they engage the stop **107** and block the opening of the trough-shaped member **102**. Further, to permit a label sliding down the chute to reach the heater **63**, the stop **71** is moved downwardly and held there by pushing the pin **81** inwardly. In operation, a label in a position indicated at **111***e* leaves the feed rollers **46** and **47**, engages the underside of the two fingers **103** and is deflected downwardly into the chute without having been turned over. The label slides downwardly along the rods **62** and over the top of the stop **71**, and is halted on top of the heater **63** by the stop portion **70** of the retainer **68** in a position indicated at **111***f*. The operator then applies the label to the article by picking up the article and slapping it on top of the label handling device. The label retainer **68** is pushed downwardly by the article and the article engages the label. The heater **63** has previously heated the label in order to activate the adhesive which causes the label to adhere to the article when the article is lifted upwardly.

To prevent the accumulation of printed labels in the label handling device while operating in the foregoing manual mode, there is provided a switch **121** (FIGS. 3, 6 and 7) which must be actuated after a printed label has been issued by the printing mechanism, before a new label will be issued. The switch **121** may be connected in the circuit of the printing mechanism such that one actuation of the switch is required after each printing operation. The switch **121** is secured to a bracket **122** which is supported by the side plates **23** and **24**, and is located underneath the leaf **72** and the rods **62**. The switch **121** includes an actuating arm **123** which extends laterally away from the main body of the switch to a position underneath a lever **124**. The lever **124** is mounted for pivotal movement on a laterally extending axis by means of a rod **126** which is mounted on the side plates **23** and **24**. From the rod **126**, the lever extends downwardly and forwardly, and its forward end portion extends over the switch actuating arm **123**. To swing the forward end portion of the lever **124** downwardly in order to actuate the switch **121**, a finger **127** is secured to the label retainer **68** at one side of the chute, the lower end of the finger **127** being bent laterally inwardly such that it extends over the forward end of the lever **124**. Since the finger **127** is off to one side of the rods **62**, it does not interfere with labels sliding down the chute. During operation, the retainer **68** and the finger **127** are pushed downwardly by the article each time an article is slapped on to the device, sufficiently far to actuate the switch **121**.

A separate switch and actuating mechanism therefore (not shown) are preferably provided for use when the device is adjusted for automatic operation with the transfer and labeling machine. The actuating mechanism may comprise a cam connected to be rotated by the mechanism which drives the label pickup mechanism of the transfer and labeling machine, the switch being positioned adjacent the cam and actuated after each label pickup operation.

In the foregoing description, it has been assumed that the labels are issued by the label printing mechanism with the adhesive side of the label facing upwardly. If the label printing mechanism were arranged to issue the labels with the adhesive side facing downwardly, the label inverting mechanism could be adjusted to invert the labels when they are permitted to move downwardly to the heater **63**. Further, while two stops have been shown for holding the label at two possible positions and the heater is shown at the lowermost of the two positions, the heater could be located at the uppermost of the two positions, in which case the label pick-up head of the automatic transfer and labeling machine would pick up the label at the lowermost of the two positions. In such operation, it would be desirable to have the heater turned off while operating in the automatic mode.

We claim:

1. A label handling device for use in a system for weighing a package, computing data relative thereto, printing such data on one side of a label, and issuing such labels, said device comprising a frame, a downwardly inclined chute on said frame, said frame being adapted to be mounted in said system with the upper end of said chute adapted to receive the printed label on issuance of the label, whereby such labels slide down said chute, a first label stop on said frame at one position adjacent the lower end of said chute, and a second label stop on said frame at a second position intermediate the ends of said chute, said first and second stops extending into the path of labels moving down said chute and thereby being adapted to engage and hold such labels at either said first or second positions, said second stop being retractable out of said path of the labels on the chute to permit the labels on issuance to move down said chute to said first position without stopping at said second position.

2. A label handling device for use in a system for weighing a package, computing data relative thereto, printing such data on one side of a label, and issuing such labels, said device comprising a frame, a downwardly inclined chute on said frame, said frame being adapted to be mounted in said system with the upper end of said chute adapted to receive the printed label, whereby such labels slide down said chute, a first label stop on said frame at one position adjacent the lower end of said chute, and a second label stop on said frame at a second position intermediate the ends of said chute, said first and second stops extending into the path of labels moving down said chute and thereby being adapted to engage and hold such labels at either said first or second positions, said second stop being retractable out of said path of the labels on the chute to permit the labels to move down said chute to said first position, said device being adapted for use with labels having a heat activatable adhesive on the side opposite the printed side, said device further including heater means on said frame at one of said positions for heating a label being held by the stop associated with said one position.

3. Apparatus as in claim **2**, wherein said heater means is located at said first position, and said first stop is also retractably mounted on said frame to permit access to the label when heated by said heater means.

4. A label handling device as in claim **1**, and further including adjustable means for holding said second stop in its retracted position whereby when said second stop is in its retracted position said labels moving down said chute move past said second stop to said first stop.

5. A label handling device for use in a system for weighing a package, computing data relative thereto, printing such data on one side of a label, and issuing such labels, said device comprising a frame, a downwardly inclined chute on said frame, said frame being adapted to be mounted in said system with the upper end of said chute adapted to receive the printed label, whereby such labels slide down said chute, a first label stop on said frame at one position adjacent the lower end of said chute, and a second label stop on said frame at a second position intermediate the ends of said chute, said first and second stops extending into the path of labels moving down said chute and thereby being adapted to engage and hold such labels at either said first or second positions, said second stop being retractable out of said path of the labels on the chute to permit the labels to move down said chute to said first position, adjustable means for holding said second stop in its retracted position whereby labels moving down said chute move past said second stop to said first stop, and retracting means on said second stop for retract-

ing said second stop each time a label being held by said second stop is being picked up.

6. A label handling device for use in a system for weighing a package, computing data relative thereto, printing such data on one side of a label and issuing such labels, said device comprising a frame, a downwardly inclined chute on said frame, said frame being adapted to be mounted in said system with the upper end of said chute adapted to receive the printed label, whereby such labels slide down said chute, and label inverting means on said frame adjacent the upper end of said chute, said label inverting means being adjustable between a first position where it receives a label, inverts said label, and directs said label into said chute, and a second position where it directs a label into said chute without first inverting said label.

7. A label handling device as in claim 6, wherein said label inverting means comprises a generally trough shaped member mounted on said frame with the opening of the trough positioned to receive labels therein, and adjustable blocking means adapted selectively to block said trough opening when the label inverting means is in said second position and to unblock said trough opening when said label inverting means is in said first position, whereby a label may be received within said opening when said label inverting means is in said first position and be inverted by said member, and a label may be blocked from entering said opening when said label inverting means is in said second position and thereby be prevented from being inverted.

8. A label handling device for use in a system for weighing a package, computing data relative thereto, printing such data on one side of a label and issuing such labels, said device comprising a frame, a downwardly inclined chute on said frame, said frame being adapted to be mounted in said system with the upper end of said chute adapted to receive the printed label, whereby such labels slide down said chute, and label inverting means on said frame adjacent the upper end of said chute, said label inverting means being adjustable between a first position where it receives a label, inverts said label, and directs said label into said chute, and a second position where it directs a label into said chute without first inverting said label, said label inverting means comprising a generally trough-shaped member mounted on said frame with the opening of the trough positioned to receive labels therein, and adjustable blocking means adapted selectively to block said trough opening when the label inventing means is in said second position and to unblock said trough opening when said label inverting means is in said first position, whereby a label may be received within said opening when said label inverting means is in said first position and be inverted in said member, and a label may be blocked from entering said opening when said label inverting means is in said second position and thereby be prevented from beng inverted, said adjustable blocking means comprising at least one finger which is pivotally mounted adjacent said trough-shaped member and extends across the opening of said trough shaped member when in blocking position.

9. Apparatus as in claim 8, wherein said trough shaped member has a slot formed therein and said finger extends into said slot and frictionally engages an edge of said slot, such frictional engagement holding said finger at an adjusted position.

10. A label handling device for use in a system for weighing a package, computing data relative thereto, printing such data on one side of a label having a heat activatable adhesive on the other side thereof, and issuing such labels, said device comprising a frame, a downwardly inclined chute on said frame, said frame being adapted to be mounted in said system with the upper end of said chute adapted to receive the printed label, whereby such labels slide down said chute, a first label stop on said frame at a first position adjacent the lower end of said chute, a second label stop on said frame at a second position intermediate the ends of said chute and above said first stop, said first and second stop extending into the path of labels moving down said chute and thereby being adapted to engage and hold such labels at either said first or second positions, said second stop being retractable out of said path of the labels on the chute to permit the labels to move down said chute to said first position, heater means on said frame adjacent said first stop for heating a label being held by said first stop, and adjustable label inverting means on said frame adjacent the upper end of said chute, said label inverting means being adjustable between one position where it receives a label when issued, inverts said label, and directs said label into said chute and another position where it directs a label into said chute without inverting said label.

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