A continuous tape is fed toward the open end of a package until the terminal tape portion is longitudinally coextensive with the open package end outside the same. The tape and package end are gathered and wrapped in sealing tape to close the package and attach the terminal tape portion thereto, and the tape is cut to provide a label projecting longitudinally away from the closed package.

The present invention relates to bags having a portion of material packaged therein, and more particularly to a method for attaching information bearing labels, slips or tags to such bags while the bags are being closed and sealed.

Nowadays, a large variety of goods and materials such as edible products are packaged as weighed or measured portions in plastic bags for sale to the ultimate consumer. When such packages are sold in stores where the customers select their purchases and then bring the same to a checkout counter for payment, for example, as in supermarkets, it is necessary that the packages bear the purchase price for the purposes of selection and payment.

While suitable automatic packaging machinery for filling and sealing plastic bags has been developed and presently is in use, numerous difficulties have been encountered in indicating the price of the goods on the packages. In the past, labels bearing the manual price have been manually affixed to the exterior of the bags by adhesively securing the same. Since the bags do not have a suitable smooth firm surface to which the label or price tag can be readily applied without exerting undue pressure which might tear the bags or crush the goods therein, the price tags often are applied so loosely that they will fall off during subsequent handling of the packages. Such difficulties and disadvantages are encountered even more frequently where an attempt is made to utilize inexpensive slips or labels which do not have sufficient adhering power to remain affixed on a plastic surface.

Accordingly, the primary object of the present invention is to overcome the foregoing difficulties and disadvantages by providing a simple, practical and economical method of applying price tags or other information bearing slips or labels to plastic bags containing products or materials.

Another object is to provide such a method which can be carried out in conjunction with existing bag filling and sealing machinery.

A further object is to provide such a method wherein the price bearing label will always be in the same location with respect to the package so that customers and clerks need not search for the label.

A still further object is to so locate the label that indicia can be written or printed thereon after the label has been affixed to the package.

Other objects will be apparent from the following description.

In accordance with the present invention, the foregoing objects are generally accomplished by feeding the terminal portion of a continuous tape longitudinally toward the open end of a package until the terminal tape portion is longitudinally coextensive with the open package and outside the same. The tape and package end are gathered and wrapped in a sealing strip which is tightened until the package is sealed and the terminal tape portion is locked between the sealing strip and the outer wall of the package. The tape is cut to leave a length thereof projecting longitudinally away from the closed package.

The foregoing method can be performed advantageously in conjunction with automatic packaging machinery wherein the bag or wrapping material is in the shape of a tube having lengthwise, successively arranged packaging accommodations or units for the goods which are connected to each other in such a way that they can be separated. The tube is fed by means of an endless conveyor on a support and one packaging unit at a time is opened for filling with a measured or weighed portion of goods. The filled packing units are intermittently fed to a sealing station by the conveyor, and at this station the packing units are separated successively from the bag providing tube and are sealed by means of twistable sealing strips which are applied to the inner wall portion of the bag. At this station, the price slip in the form of an oblong rectangular strip is positioned between the bag wall and the sealing strip by suitable automatic mechanism.

A preferred embodiment is shown in the accompanying drawing in which:

FIG. 1 is a perspective view of a sealed package having a price tag or label affixed thereto in accordance with the present invention; and

FIG. 2 is a fragmentary perspective view of apparatus for positioning the label, gathering the neck of a filled bag, and affixing the sealing strip.

Referring now to FIG. 1 of the drawing in detail, a package 1 is shown having an opening 2 which has been sealed by a twisted sealing strip 3 with an information bearing label 4 arranged and secured between sealing strip 3 and the wall of the bag at its opening 2.

In FIG. 2, a mechanism is shown for positioning the price label 4, closing the bag opening 2, and twisting the sealing strip 3 onto the neck of the bag to affix the label.

The price labels are supplied in form of a continuous tape 5 from a roll (not shown) which tape is fed intermittently by intermittently operated driving rollers 6 and 7. The terminal section of the tape is placed on the outer surface of the wall of the bag near its opening, and another section of the tape is allowed to extend longitudinally outwardly of the bag and is severed by a cutting device 9 under the control of a photocell 8 to form the individual label 4.

The tape 5 may have the desired information thereon in advance or the information may be printed thereon by a printing mechanism (not shown) as the tape is fed to the bag from the supply roll. Alternatively, the information may be printed on the label after it has been secured to the package. This enables the current price to be indicated when the merchandise is put out for sale, and is made possible by the manner in which the label is affixed.

The bag closing and sealing station includes various devices 10 and 11 which are located at opposite sides of the neck of the bag. Each device is provided with a V-shaped recess diverging towards the neck of the bag and terminating in a narrow guiding slot 12 and 13, respectively. Preferably, the device 10 is stationary, but the device 11 is movable in such a way that as in gathering the neck of the bag it can be moved in the direction towards the device 10.

The closing and sealing station further includes folding fingers 14 and 15 in the device 10 which are moveable in the direction towards the guiding slot 12 to place
the sealing strip about the gathered neck of the bag; knives 16 and 17 for cutting the strip 3 from a continuous tape 18, preferably constructed of plastic and reinforced with wire; and grasping claws 19 and 20 journaled for rotation in the device 11 for twisting the strip 3 onto the bag.

In carrying out the closing and sealing operations, the open end of the bag is inserted into the opening formed by the V-shaped recesses of the devices 10 and 11 when in their inactive position as shown, and a portion of the tape 5 is positioned (as already described) between the neck of the bag and the device 11. The device 11 is moved across the device 10 whereby the neck of the bag is gathered within the closed ends of the guiding slots 12 and 13 and is closed, and the label strip 4 is then cut from the tape 5.

When the neck of the bag together with the label strip 4 has been gathered in this manner and is held closed in the guiding slot 12, the sealing strip tape 18 is positioned about the bag and the label by the fingers 14 and 15 and a strip 3 is cut therefrom by the knives 16 and 17. The grasping claws 19 and 20 are then moved into a position to engage the strip 3 and are turned two and one half revolutions by means of a conventional device (not shown) whereby the sealing strip 3 is twisted to a desired degree of tightness to seal the bag with a price label affixed thereto. The device 11 thereupon is retracted and the completed package is removed from the closing and sealing station.

The method in accordance with the present invention can also be advantageously employed in conjunction with automatic packing machinery which uses a tube of wrapping material having lengthwise extending detachable bag units each being sealed at the bottom. The tube is fed continuously in a conventional manner on a support and the bag units are opened successively by inflating the same with compressed air. The merchandise is then inserted into the bag unit and the filled bag units, while still interconnected, are moved by a conveyor through a closing and sealing station such as shown in and described with reference to FIG. 2.

However, in such an arrangement because of the continuous movement of the bag tube through the sealing station, it is necessary to feed the price labels 4 from one side of the bag unit and it is advisable that the labels be inserted and positioned between the bag units and the guiding slot 12 of the device 10.

It also is possible to utilize a conventional arrangement to continuously provide the price labels with the desired indicia thereon by means of a printing device arranged in the bag filling station.

From the foregoing description, it will be seen that the present invention provides a useful method which can be performed automatically by employing conventional mechanisms, devices and machinery which are readily arranged to carry out the method steps. Obviously many other modifications and variations are possible in the light of the above teachings. It is therefore to be understood that, within the scope of the appended claim, the invention may be practiced otherwise than as specifically described.

I claim:

1. A method of attaching labels to a bag having material packaged therein, which comprises:
   (a) feeding a continuous tape longitudinally towards the open end of said bag until the terminal portion of said tape is longitudinally coextensive with said open end, and outside the bag, and the remainder of said tape extends from said terminal portion thereof in a direction outward of said end;
   (b) gathering said open end and said terminal portion;
   (c) wrapping said gathered end and said terminal portion in a sealing strip in such a manner that said terminal portion is interposed between said strip and the outer wall of said bag;
   (d) tightening said sealing strip until said end is sealed and said portion is locked to the same; and
   (e) severing said tape at a point remote from said bag so that a portion of the tape contiguously integral with said terminal portion projects away from said bag in a direction outward of said seal end to constitute a label.

References Cited

UNITED STATES PATENTS
2,447,754 8/1948 Hirschhorn 53—14
2,867,066 1/1959 Platt et al. 53—128 X
2,939,257 6/1960 Bartelt 43—134

FOREIGN PATENTS
779,748 7/1957 Great Britain.

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