June 19, 1973 C. SCHROTER ET AL 3,740,299

HAND DISPENSER AND APPLICATOR FOR ADHESIVE TICKETS

Filed Dec. 16, 1971 3 Sheets-Sheet 1

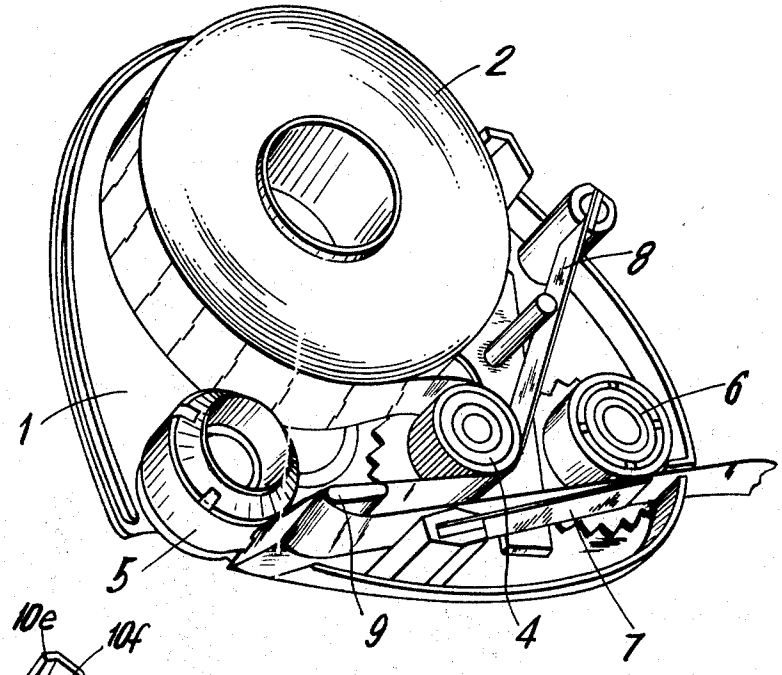


FIG. 1

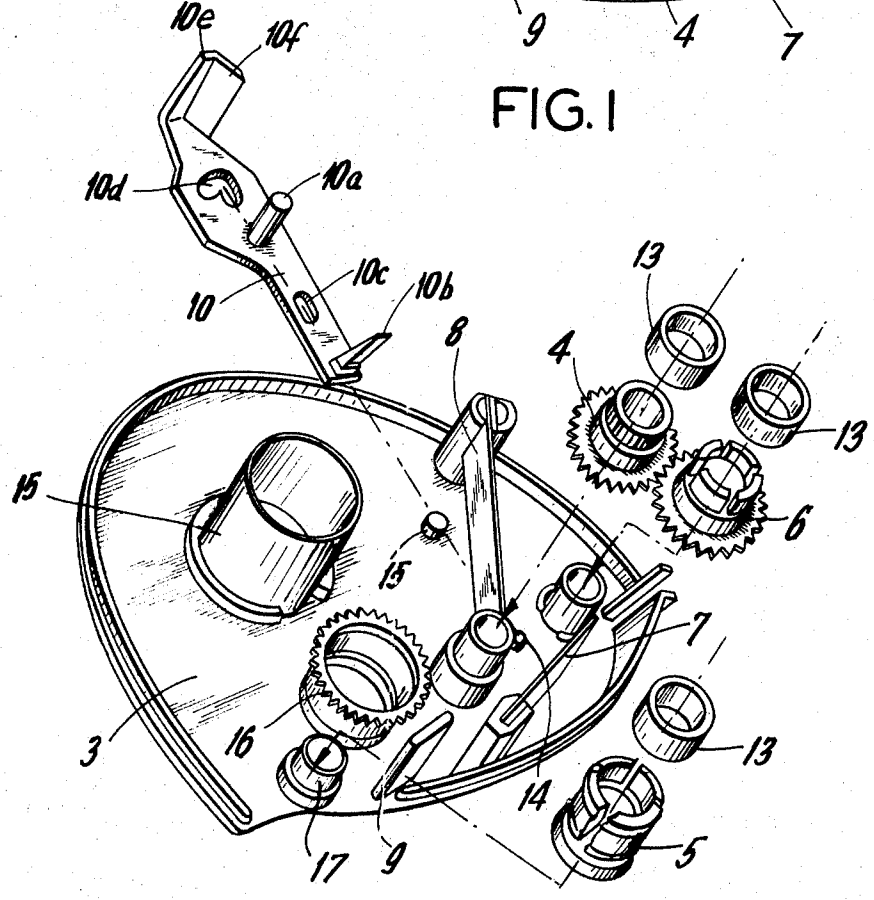


FIG. 2

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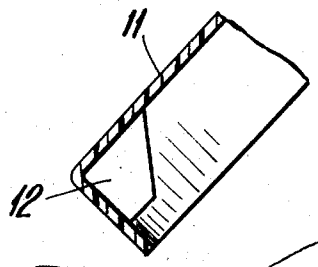


FIG. 3A

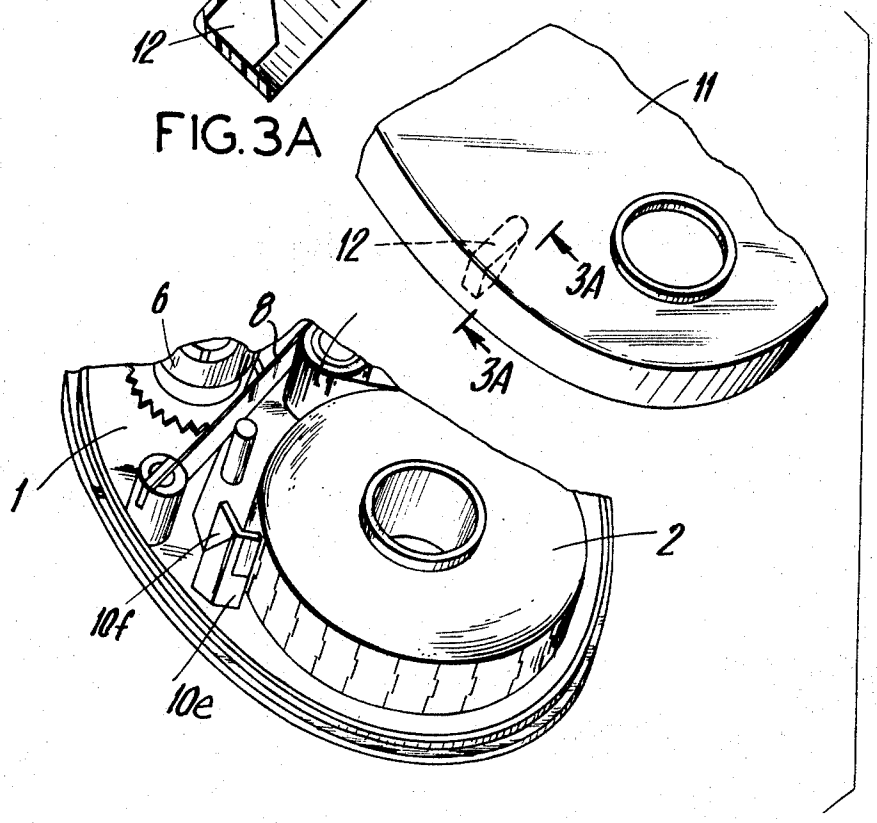


FIG. 3

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3 Sheets-Sheet 3

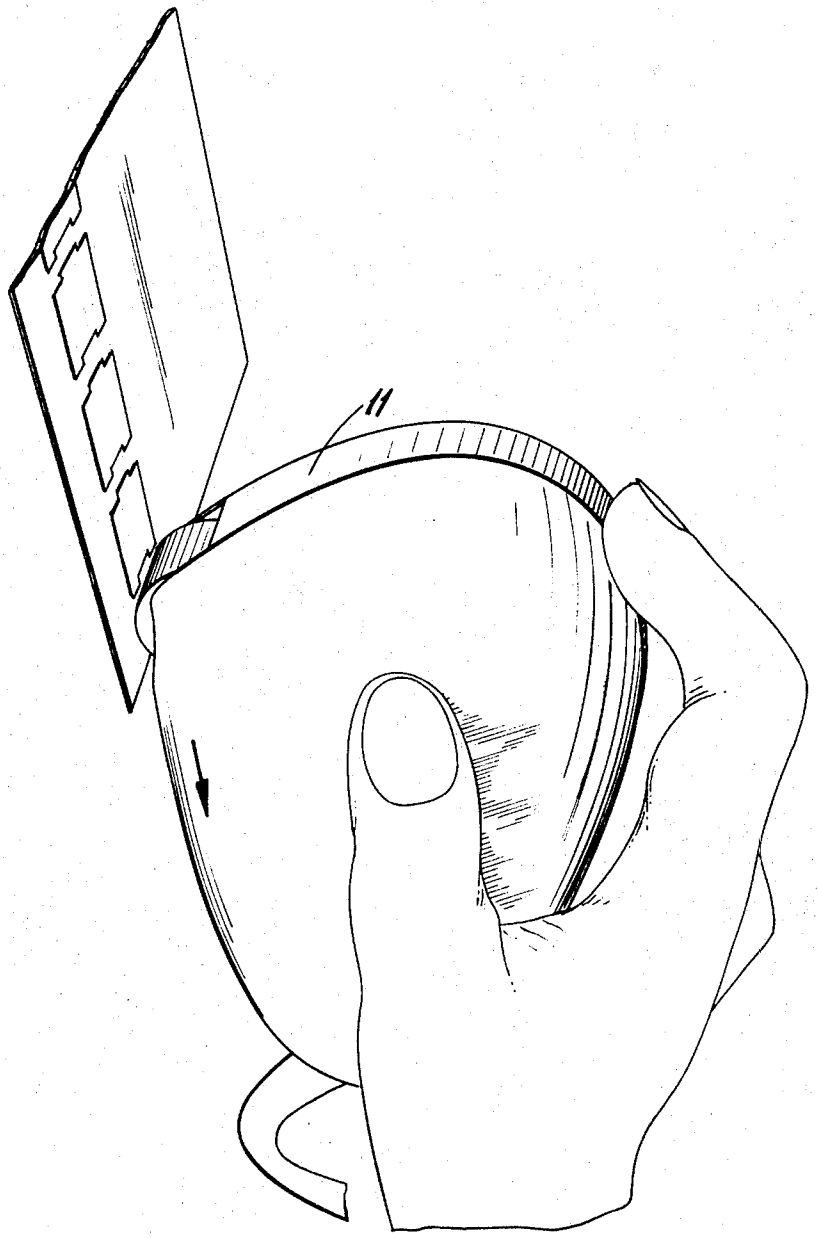


FIG.4

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HAND DISPENSER AND APPLICATOR FOR ADHESIVE TICKETS

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Int. Cl. B44c 7/00
U.S. Cl. 156—577 12 Claims

ABSTRACT OF THE DISCLOSURE

The rolling of the applicator of a dispensing device along a surface on which adhesive tickets are to be applied drives a mechanism that pulls a carrier tape, on which the adhesive tickets are supplied, from a supply roll, by causing a tension roll indirectly geared to the applicator roll to pull the carrier tape first around a take-off roll, also geared to the applicator roll, and then around the rounded edge of a guide vane, at which point the tickets carried on the tape are projected against the applicator roll and drawn under it. The tickets are separated from the carrier tape and then torn away from the succeeding tickets because the drive of the take-off and tension rolls is such that the peripheral velocity of the applicator roll is higher than the velocity of the tape in the neighborhood of the guide vane.

This invention relates to a hand apparatus for dispensing and applying adhesive labels or other sticker tickets which are coated on one or both sides and are supplied on a carrier tape. The dispenser comprises a housing, a bearing for the roll of ticket tape, a take-off roll, a guide vane and a tension roll. The hand dispenser is particularly adapted to dispense and apply adhesive tickets coated on both sides that are to be applied on a substrate either one by one or in successive group arrangements.

Dispensing devices are known in which adhesive tickets separated from each other only by a cut may be applied singly one after the other to a substrate. In the case of such devices the tape is drawn from its roll and around a guide by one or more tension rolls acting on the carrier tape after it has been separated from the tickets. The drive of the tension roll is provided by means of a lever movement from a tong-like extension of the dispensing device.

In the case of another known device the drive of the tension roll is provided by a driving roll designed to roll on the substrate, which then drives the tension roll. The tape is arranged to be pulled forward through the engagement of the driving and tension rolls.

The known mechanisms have the disadvantage that they either are technically and therefore economically wasteful or else require the user to exercise close attention, since he must not only take care that the applicator roll is correctly rolled on the substrate, but also that the drive roll is rolled on the substrate as well.

The dispensing device of the tong-carrying variety has the disadvantage that the tickets can be applied to a substrate only singly one after another. It is therefore not adapted to apply a series of tickets in an exact predetermined separation in a straight line succession on a substrate, since the user continually loses the aligment by the opening and closing of the tongs.

The previously mentioned roller-driven device is adapted for applying several tickets in succession with predetermined spacing only when the tickets are already arranged on the carrier tape with that spacing. If then occasionally only a single ticket is to be applied to a substrate, then this device has the disadvantage that individual tickets succeed each other on the carrier tape so

closely that a second ticket readily follows the first and becomes partly applied to the substrate.

The known devices are not at all adapted for the dispensing and applying of adhesive tickets coated on both sides.

The problem to which this invention is directed is the provision of a simple, inexpensive hand-operated device for dispensing and applying adhesive tickets, by which adhesive tickets coated on both sides as well as those coated on one side can be dispensed and applied. In particular, the invention aims to provide a device for dispensing and applying adhesive tickets coated on both sides which are connected together on a carrier tape but are nevertheless arranged to be easily separable, without the provision in the device of a wasteful cutting mechanism.

The solution of the problem is found in a hand-dispensing device in which the applicator roll drives both the take-off roll and the tension roll and in which the peripheral velocity of the applicator roll is greater than that of the take-off roll and of the tension roll.

By means of the drive of the take-off and tension rolls, which draws the carrier tape around the guide vane, the result is then obtained that superfluous contrivances independent of the unwinding operation are avoided and, as a further result, the user can concentrate entirely on rolling the device along to apply the proper number of tickets.

The greater peripheral velocity of the applicator roll makes possible, moreover, that as the connected tickets unroll in their readily separable condition on the carrier tape, each in turn is torn off from the following ticket, whereby the provision of a cutting device is obviated. This arrangement, because the tickets then proceed over the applicator roll spaced one from the other, has the advantage that in the application of single tickets on a substrate the following ticket is not accidently stuck on along with it. The arrangement has the further advantage that regardless of whether the tickets are arranged on the ticket tape completely separated or easily separable, the user can tell when a single ticket has been released from the carrier tape, because he feels a slight kick arising from the difference in the respective peripheral velocities of the applicator roll and of the carrier tape in the neighborhood of the guide vane and the change of tension consequently produced when a ticket is torn off and no longer drags the applicator roll.

The dispenser is preferably so designed that, in addition, the peripheral velocity of the tension roll is somewhat greater than that of the take-off roll, but still smaller than that of the applicator roll. The effect is thus obtained that the ticket tape is always led tightly around the guide vane.

The drive of the take-off roll and of the tension roll preferably takes place by means of a gear on the applicator roll that engages an external ring gear that also engages the gear of the take-off roll, which in turn operates in connection with a gear fixed on the tension roll.

The differing peripheral velocities may be determined by differences in the diameter of the rolls in the case of equal gear ratios or by differing gear ratios in the case of equal roll diameter, or by some combination of both methods.

The periphery of the take-off and applicator rolls is preferably provided with a silicon coating in order to prevent, in the case of rolls of tickets coated on both sides, sticking of the coated upper side of the ticket.

For the utilization of the dispenser with adhesive tickets coated on one side it is advantageous to provide leaf springs to press the tape against both the take-off and tension rolls. In the case of rolls of tickets coated on both sides the leaf spring working on the take-off roll is not necessary, hence this spring is preferably so arranged in

the apparatus that it can easily be removed from its mounting stud.

In order to facilitate the loading of a new tape, it is advantageous to provide a lever with which the springs pressing against the take-off and tension rolls can be disengaged. On the housing cover a projecting ridge with a bevelled edge is preferably provided which upon closing of the housing presses on an oblique surface of the lever, whereby the latter is moved from its disengaged position into its normal position, which results in applying the springs to the take-off and tension rolls respectively.

For the further explanation of the invention reference is made to the illustrative embodiment shown in the annexed drawings, in which:

FIG. 1 is a perspective view of a hand-operated dispenser with the housing cover removed;

FIG. 2 is an exploded perspective drawing of the dispenser without cover and without ticket roll;

FIG. 3 is a perspective view of a portion of the dispenser and of the housing cover;

FIG. 3A is a section along lines 3A—3A of FIG. 3, and

FIG. 4 is a perspective view of the dispenser in use.

The dispensing device comprises a lower housing unit or base **1** and a cover **11**. On the base **1** is arranged a bearing **3** for the ticket roll **2**. Bearing pins for the take-off roll **4**, the applicator roll **5** and the tension roll **6** are also provided. The take-off roll **4**, the applicator roll **5** and the tension roll **6** are each provided with a gear. The gears of the take-off roll **4** and of the tension roll **6** are positioned in direct engagement. The gears of the applicator roll **5** and of the take-off roll **4** are connected with each other by a ring gear **16** which is seated on an annular bearing **17** carried by base **1**.

Two leaf springs **7** and **8**, which press against tension roll **6** and take-off roll **4** respectively are removably arranged in slits of mounting studs that are fixed on base **1**. Also on base **1** a guide vane **9** is mounted in the neighborhood of applicator roll **5**.

The disengaging lever **10** is shiftably mounted by slit apertures **10***c* and **10***d* on bosses **14** and **15** which are carried by base **1**. The slit **10***d* has a lateral cut-out into which lever **10** is laterally movable for seating. On lever **10**, pins **10***a* and **10***b* are so arranged that they engage leaf springs **7** and **8** when lever **10** is actuated to disengage the springs from the take-off roll **4** and the tension roll **6** respectively. The lever **10** is further provided with a grip portion **10***e* at right angles, which has an oblique surface **10***f*. On the inside of the cover above the handle **10***e* a projecting ridge **12** with an oblique edge is arranged which presses against the oblique surface **10***f* of the lever grip **10***e* when cover **11** is closed over base **1** and thus moves lever **10** out of its seat in the lateral cut-out of slit **10***d* back into normal position, whereby the springs **7** and **8** again are allowed to press against take-off roll **4** and tension roll **6** respectively.

Silicone rubber rings **13** are seated on take-off roll **4**, applicator roll **5** and tension roll **6**.

What is claimed is:

1. A hand operated device for dispensing and applying adhesive tickets coated on one or both sides and supplied on a carrier tape, comprising a housing including a cover therefor, a bearing for a ticket tape roll, a take-off roll, an applicator roll, a reversing guide vane, and a tension roll, in which said applicator roll is arranged to drive said take-off and tension rolls in such a manner that the peripheral velocity of said applicator roll is greater than the peripheral velocity of said take-off roll and also greater than that of said tension roll.

2. A dispensing device for adhesive tickets as defined in claim **1** in which said applicator roll is arranged to drive said take-off and tension rolls in such a manner that the peripheral velocity of said tension roll is greater than the peripheral velocity of said take-off roll, but nevertheless smaller than that of said applicator roll.

3. A dispensing device for adhesive tickets as defined in claim **1** in which said applictaor roll drives said take-off and tension rolls by a gear train in which a gear fixed on said applicator roll drives a gear fixed on said take-off roll through an intermediate gear and said gear fixed on said take-off roll engages a gear fixed on said tension roll.

4. A dispensing device for adhesive tickets as defined in claim **3** in which said intermediate gear is a ring gear mounted on an annular bearing.

5. A dispensing device for adhesive tickets as defined in claim **3** in which said gear train is such that the rate of revolution of said applicator roll, said take-off roll and said tension roll are the same but in which the diameter of said applicator roll is greater than the diameter of said take-off roll and also greater than that of said tension roll.

6. A dispensing device for adhesive tickets as defined in claim **5** in which the diameter of said tension roll is greater than that of said take-off roll, but nevertheless smaller than that of said applicator roll.

7. A dispensing device for adhesive tickets as defined in claim **3** in which said applicator take-off and tension rolls are of equal diameter but in which the diameter of said gear fixed on said applicator roll is smaller than the respective diameters of said gears and fixed on said take-off and tension rolls.

8. A dispensing device for adhesive tickets as defined in claim **7** in which the diameter of said gear fixed on said tension roll is smaller than the diameter of said gear fixed on said take-off roll, but nevertheless larger than the diameter of said gear fixed on said applicator roll.

9. A dispensing device for adhesive tickets as defined in claim **1** in which the peripheries of said take-off roll, of said applicator roll and of said tension roll are provided with a silicone rubber coating.

10. A dispensing device for adhesive tickets as defined in claim **1** in which springs are arranged to press said tape against said take-off roll and against said tension roll respectively.

11. A dispensing device for adhesive tickets as defined in claim **10** in which a lever is arranged for holding said springs out of engagement for facilitation of loading and unloading said ticket supply tape.

12. A dispensing device for adhesive tickets as defined in claim **11** in which said lever has a grip portion having one of its surfaces obliquely disposed and said cover of said housing has a projecting ridge having a bevelled edge, which upon closing of said housing with said cover engages said obliquely disposed surface of said grip portion of said lever to unseat said lever from its position that facilitates loading and move it to a position that allows said springs to press said tape against said take-off and tension rolls respectively.

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156—584