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(54) **Transfer head for applicator**

(57) A transfer head for use in an applicator for transferring a paint to a transfer tape (4), which is made to run between a feed reel and a tape-up reel mounted in an applicator body and to bear a pair, an adhesive and so on on its surface, and for correcting an error, by holding the transfer tape (4) on a tongue portion (8) of the leading end of a transfer head (7) protruded from and fixed by an opening of the applicator body for holding the transfer tape (4), and by sliding the tongue portion (8) in contact with a transfer object. In the transfer head (7): guide plates (9) are erected at the two sides of the tongue portion (8) of the leading end of the transfer

head (7), as protruded from and fixed by the opening of the applicator body; guide ridges (10) are so protruded to form a transfer tape guide passage (11) that a predetermined longitudinal distance between the guide plates (9) erected at the two sides of the tongue portion (8) of the transfer head (7) may have a transfer tape width; and guide pins (12) are juxtaposed at the back of the transfer tape guide passage to be spread from guide ridges (10) by a distance equal to the transfer tape width and to protrude to the surface and the back.

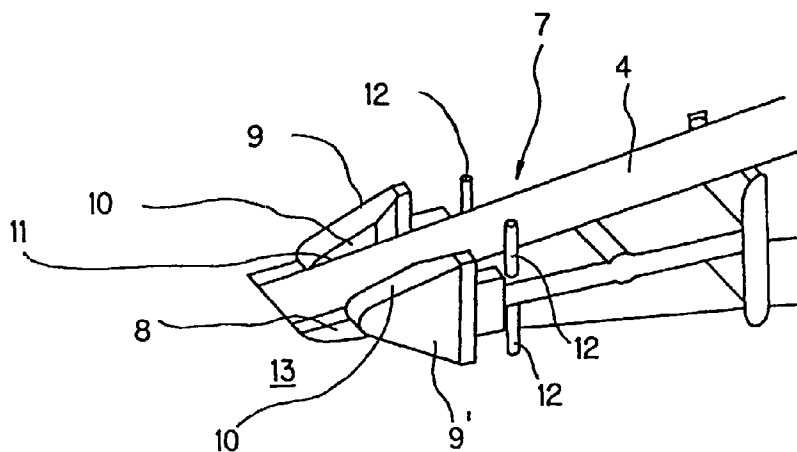


Fig. 4

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to an applicator for transferring a paint or the like, correcting an error or the like or applying an adhesive by sliding a transfer tape bearing the paint or adhesive (as will be called the "paint or the like") on its surface, in close contact with a transfer object (or an object to have the paint or the like applied thereto) and, more particularly, to a transfer head composing the applicator.

Related Art

[0002] In the prior art, the transfer head in the applicator for transferring a paint or the like, correcting an error or the like or applying an adhesive by sliding the transfer tape bearing the paint or the like on its surface in close contact with the transfer object has to be operated by the user to slide the transfer tape in close contact with the surface of the transfer object while being pushed at its back, so as to ensure the transfer of the paint or the like, as applied to the transfer tape, to the transfer object. In the actual use, however, a load for displacing the tape to the right and left is applied to the tape when the tape is slid not only back and forth but also in an arcuate curve. When this transfer head is slid in close contact with the surface of the transfer object, on the other hand, it is exposed to a heavy load. As a result, especially the tongue portion of the leading end of the transfer head is vertically rocked so that the transfer tape peels off the tongue portion. Thus, guide plates for regulating the peel or the like of the transfer tape are erected at the two sides of the tongue portion of the leading end of the transfer head. Moreover, the guide plates, as erected for regulating the torsion, the peel and so on of the transfer tape, are so tapered in the feeding direction of the transfer tape as to have the width of the transfer tape at its leading end so that the troubles of the transfer tape, as might otherwise be caused in the transferring work, may be prevented.

[0003] In the aforementioned prior art, however, the torsions, the peels from the tongue portion and so on are caused by the rocking motions of the tongue portion of the leading end of the transfer head in the transfer tape which is held by the tongue portion. With the guide plates erected at the two sides of the tongue portion for regulating the peels and so on of the transfer tape, therefore, the transfer tape can be prevented from peeling off the tongue portion by the guide plates. Unless the guide plates at the two sides of the tongue portion of the leading end of the transfer head have a spacing larger than the transfer tape width or a sufficient height, however, the transfer tape, as held by the tongue portion of the leading end of the transfer head, is swung with

respect to its feeding and winding directions so that the tape transferred to the paper surface meanders to degrade the using feel, when the tongue portion of the leading end of the transfer head for holding the transfer tape is slid by the user into close contact with the surface of the transfer object. With an excessive height, the design is deteriorated. If the guide plates on the transfer side are high, there arises another defect that the transfer is impossible without an enlarged using angle. In the worst case, the transfer tape, as held by the tongue portion of the leading end of the transfer head, may be cut off.

[0004] If the guide plates, as erected at the two sides of the tongue portion of the leading end of the transfer head for regulating the torsion, the peel and so on of the transfer tape, are so tapered in the feeding direction (or the longitudinal direction) of the transfer tape as to have the width of the transfer tape at its leading end, moreover, the transfer tape to be wound is sufficiently regulated by the guide plates to reduce the transverse swings at the tongue portion of the transfer head because the guide plates are given the transfer tape width at their leading ends. As a result, the troubles such as the peel or the cut of the transfer tape are reduced. Since the guide plates for regulating the peel of the transfer tape are given the transfer tape width at their leading ends, however, they are wider at this side of the leading ends than the width of the transfer tape. As a result, the transfer tape may swing to the right and left on the leading ends of the guide plates in the feeding and winding directions (or the longitudinal directions) so that it cannot be sufficiently prevented from peeling off. Another problem is that it is impossible to prevent the troubles of the peel, the cut and so on of the transfer tape reliably.

SUMMARY OF THE INVENTION

[0005] It is, therefore, an object of the invention to eliminate the aforementioned defects and problems of the prior art and to make it possible to prevent the troubles of the transfer tape, as held by the tongue portion of the leading end of the transfer head, and to prevent the irregular winding of the take-up reel thereby to smooth the transfer.

[0006] According to a first aspect of the invention, there is provided, in an applicator for transferring a paint to a transfer tape, which is made to run between a feed reel and a tape-up reel mounted in an applicator body and to bear a paint, an adhesive and so on on its surface, and for correcting an error, by holding the transfer tape on a tongue portion of the leading end of a transfer head protruded from and fixed by an opening of the applicator body for holding the transfer tape, and by sliding the tongue portion in contact with a transfer object, a transfer head wherein guide plates are erected at the two sides of the tongue portion of the leading end of the transfer head, as protruded from and fixed by the open-

ing of the applicator body, wherein guide ridges are so protruded to form a transfer tape guide passage that a predetermined longitudinal distance between the guide plates erected at the two sides of the tongue portion of the transfer head may have a transfer tape width, and wherein guide pins are juxtaposed at the back of the transfer tape guide passage to have a distance between the guide ridges and equal to the transfer tape width and to protrude to the surface and the back.

[0007] According to a second aspect of the invention, guide grooves are formed in the transfer head at the back of the guide pins for clamping and guiding the two sides of the transfer tape.

[0008] For practicing the invention, even if the tongue portion of the leading end of the transfer head of the applicator is slid in close contact with the surface of the transfer object, it is fed and taken up while being guided and regulated by both the guide plates, which are erected at the two sides of the tongue portion of the leading end of the transfer head protruded from and fixed by the opening of the applicator body, and the transfer tape guide passage which is formed by protruding the guide ridges having the transfer tape width at the predetermined longitudinal distance between the guide plates. For the actual use, therefore, the transfer tape is not swung to the right and left with respect to the feeding and winding directions so that the troubles of the peel of the transfer tape from the tongue portion of the leading end of the transfer head and the cut of the transfer tape after peeled can be prevented.

[0009] At the middle portion of the transfer head, moreover, there are so juxtaposed the guide pins having the distance between the guide ridges protruded to conform to the transfer tape width as to protrude to the surface and back, and there are further formed the guide grooves over the guide pins. As a result, the transfer tape is fed and taken up while being guided and regulated by the guide plates which are erected from the two sides of the tongue portion of the leading end of the transfer head, by the transfer tape guide passage which is formed by protruding the guide ridges between the guide plates with the transfer tape width of the predetermined distance, and by the guide pins or guide grooves which are juxtaposed to have the distance between the guide ridges at the back of the transfer tape guide passage. As a result, the transfer tape can be reliably prevented from peeling from the tongue portion of the leading end of the transfer head and from twisting thereby to smooth the transfer of the paint or the like by the applicator. It is further possible to prevent the irregular winding of the take-up reel thereby to eliminate the causes for obstructing the rotations of the reel.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

Fig. 1 is a front elevation showing an applicator

according to an embodiment of the invention;

Fig. 2 is a side elevation showing a transfer head composing the applicator according to the embodiment of the invention;

Fig. 3 is a top plan view of the transfer head composing the applicator according to the embodiment of the invention; and

Fig. 4 is an enlarged perspective view showing an essential portion of the state in which the transfer head composing the applicator according to the embodiment of the invention is feeding a transfer tape.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] The invention will be described in more detail in connection with its embodiment with reference to the accompanying drawings. Reference numeral 1 designates an applicator according to an embodiment of the invention. This applicator 1 is constructed to comprise: an applicator body 2 charged with a feed reel 5 and a take-up reel 6 for feeding and taking-up a transfer tape 4 bearing a paint or the like on its surface, when used; and a transfer head 7 protruded from and fixed by an opening 3 of the applicator body 2 such that the transfer tape 4 made run on the feed reel 5 and the take-up reel 6 fitted in the applicator body 2 is supported at its back.

[0012] Moreover, guide plates 9 and 9 are erected at the two sites of a tongue portion 8 of the leading end of the transfer head 7, as protruded from and fixed by the opening 3 of the applicator body 2, and guide ridges 10 and 10 are so protruded to form a transfer tape guide passage 11 that a predetermined longitudinal distance taken in the feeding direction of the transfer tape 4 between the guide plates 9 and 9 erected at the two sides of the tongue portion 8 of the transfer head 7 may have a transfer tape width. In addition, guide pins 12 and 12 are juxtaposed at the back of the transfer tape guide passage 11 to have a distance between the guide ridges 10 and 10 and equal to the transfer tape width. At the back of the guide pins 12, there are formed guide grooves 14 for clamping and guiding the two sides of the transfer tape 4. By making the height 9' of the leading ends of the guide plates 9 and 9 larger than that of the prior art, as shown in Figs. 2 and 4, the guidance or the transfer tape 4 can be made more reliable.

[0013] With the applicator 1 thus constructed according to the embodiment of the invention, even when the tongue portion 8 of the leading end of the transfer head 7, as protruded from and fixed by the opening 3 of the applicator body 2, is slid in close contact with the surface of a transfer object 13 by the user using the applicator 1 to transfer the paint or the like, the transfer tape 4, as held by the tongue portion 8 of the leading end of the transfer head 7, is fed out and taken up while being guided and regulated by the guide plates 9 and 9, which are erected at the two sides of the tongue portion 8 of the leading end of the transfer head 7, and by the trans-

fer tape guide passage 11 which is formed by protruding the guide ridges 10 and 10 in parallel to have the transfer tape width of the predetermined longitudinal distance between the guide plates 9 and 9. By sliding the transfer head 7, the transfer tape 4 is not swung, even when fed and wound at the tongue portion 8 of the leading end of the transfer head 7, to the right and left with respect to the feeding and winding direction so that the transfer tape 4 can peel off the tongue portion 8 of the leading end of the transfer head 7 or can be prevented from being cut off.

[0014] At the back of the transfer tape guide passage 11 of the transfer head 7, moreover, there are juxtaposed the guide pins 12 and 12 which has the distance between the guide ridges 10 and 10 erected to protrude to the surface and back of the tongue portion 8 of the transfer head 7 with the width of the transfer tape 4, or there is formed the guide groove 14. By sliding the tongue portion 8 of the leading end of the transfer head 7 in close contact with the surface of the transfer object 13 for the use of the applicator 1, the transfer tape 4, as held on the surface and back of the tongue portion 8 of the leading end of the transfer head 7, is fed and wound while being guided and regulated by: the guide plates 9 and 9 which are erected from the two sides of the tongue portion 8 of the leading end of the transfer head 7; the transfer tape guide passage 11 which is given the parallel side edges by protruding the guide edges 10 and 10 with the transfer tape width of the predetermined distance between the guide plates 9 and 9 erected from the two sides of the tongue portion 8 of the transfer head 7; the guide pins 12 and 12 which are protruded from the surface and back of the distance between the guide ridges 10 and 10; and the guide groove 14. As a result, the transfer tape 4, as held by the tongue portion 8 of the leading end of the transfer head 7, can be reliably prevented from peeling off the tongue portion 8 of the leading end of the transfer head 7 holding it or from being cut off, so that the transfer of the paint or the like by the applicator 1 can be smoothed. Especially by providing the guide groove 14 in the vicinity of the tape-up reel 6, this reel can be corrected in its take-up position to prevent the irregular winding of the tape.

[0015] With the construction of the invention, as has been described hereinbefore, the transfer tape is smoothly fed out and taken up, when the applicator is to be used, without any transverse swing by the guide plates, the transfer tape guide passage and the guide pins. As a result, the transfer tape can be freed from the troubles of its peel from the tongue portion of the leading end of the transfer tape or its cut thereby to provide an excellent effect that the smooth transfer can be reliably performed.

Claims

1. In an applicator for transferring a paint to a transfer tape, which is made to run between a feed reel and

a tape-up reel mounted in an applicator body and to bear a pair, an adhesive and so on on its surface, and for correcting an error, by holding the transfer tape on a tongue portion of the leading end of a transfer head protruded from and fixed by an opening of said applicator body for holding said transfer tape, and by sliding said tongue portion in contact with a transfer object,

a transfer head wherein guide plates are erected at the two sides of the tongue portion of the leading end of said transfer head, as protruded from and fixed by the opening of said applicator body, wherein guide ridges are so protruded to form a transfer tape guide passage that a predetermined longitudinal distance between said guide plates erected at the two sides of the tongue portion of said transfer head may have a transfer tape width, and wherein guide pins are juxtaposed at the back of said transfer tape guide passage to have a distance between said guide ridges and equal to the transfer tape width and to protrude to the surface and the back.

2. A transfer head according to claim 1, wherein guide grooves are formed in said transfer head at the back of said guide pins for clamping and guiding the two sides of the transfer tape.

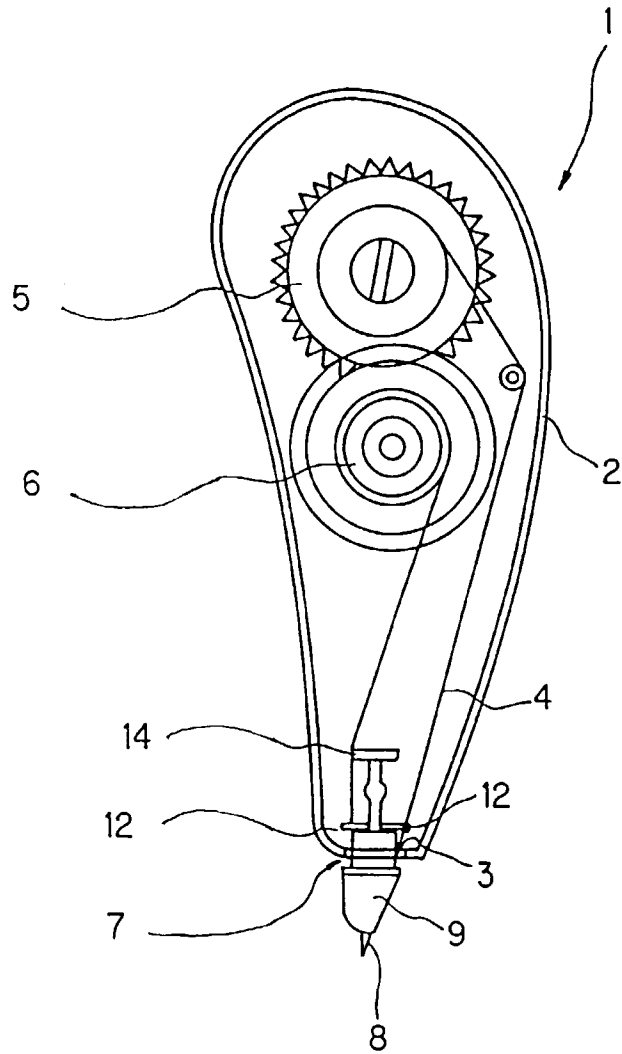


Fig. 1

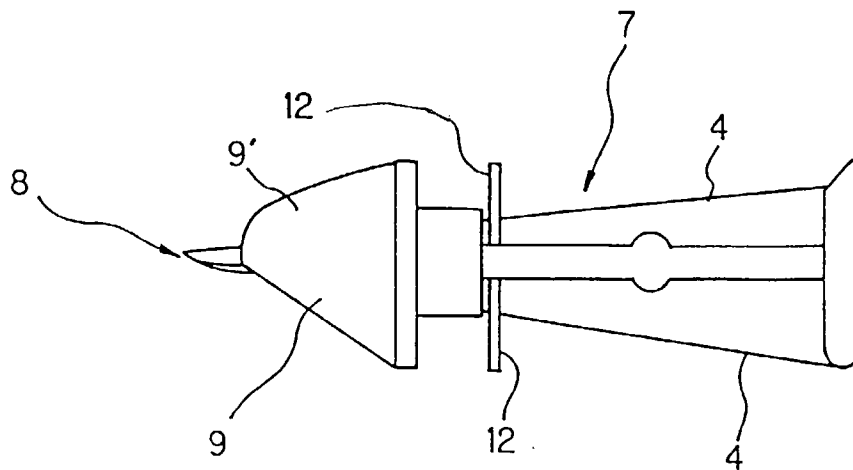


Fig. 2

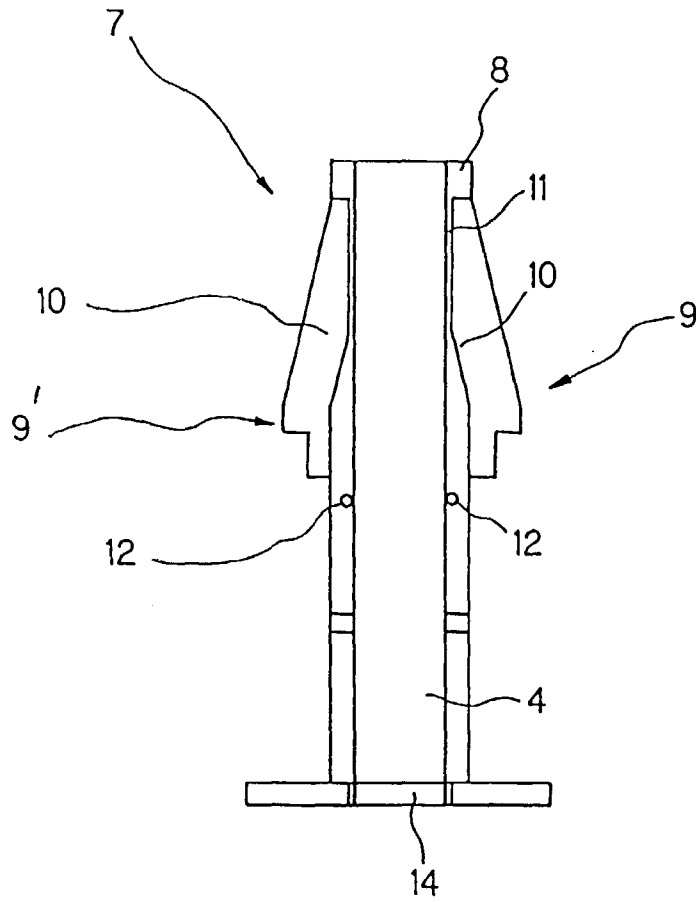


Fig. 3

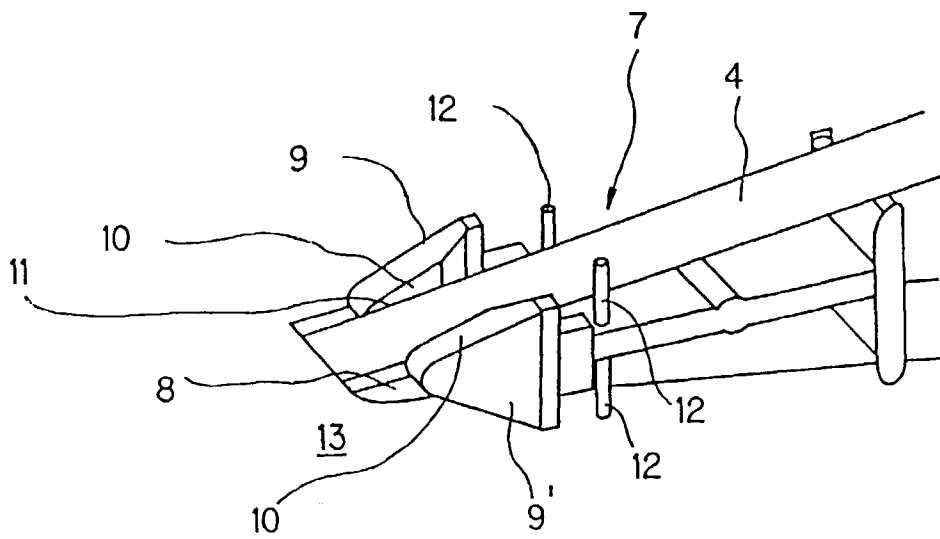


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 0475

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	WO 97 46475 A (KORESKA PETER ;KORESKA ROBERT (AT); KORES HOLDING ZUG AG (CH)) 11 December 1997 * page 5, line 31 - page 6, line 30; figure 1 *	1	B65H37/00
X	EP 0 770 572 A (TOMBOW PENCIL) 2 May 1997 * figure 1 *	1	
A	DE 44 04 103 A (GILLETTE CO) 18 August 1994 * figures *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6) B65H
Place of search BERLIN		Date of completion of the search 30 October 1998	Examiner David, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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