

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO HOLDERS FOR TAPE CASSETTES

(71) We, IDN INVENTIONS AND DEVELOPMENTS OF NOVELTIES A.G., a Swiss Company, of CH-7078 Lenzerheide, Switzerland, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The invention relates to holders for tape cassettes, of the type comprising a housing having an entrance through which a cassette may be inserted, an ejector device which biases the inserted cassette in the direction of the entrance, and a locking means to hold the cassette in the housing.

Holders of this type are already known and are constructed after the manner of a drawer, the cassette being inserted in a slider which is biased by the ejector device. When the locking means is released, the slider slides with the cassette towards the entrance and is arrested by stops. Several holders of this type may be interlocked to form stacking blocks, and the tape coils of the cassette may be secured by means of cams which are moulded on the slider.

The object of the invention is to provide a holder with the features mentioned initially, which will be more economic with regard to manufacturing costs than the known holder.

According to the invention a holder for a tape cassette comprises a rectangular housing for receiving the cassette, the housing having an entrance on one side through which a cassette may be inserted, an ejector device which biases the cassette in the direction of the entrance, and a locking means to hold the cassette when pushed into the housing, in which the ejector device is a leaf spring fixed inside the housing opposite the entrance and acting directly on the cassette and in which the

locking means is an integral extension of the housing, which, in use, engages behind the cassette when pushed into the housing and which is displaceable from the locking position.

In a holder according to the invention, both the housing and the ejector device can be very simple, so that the manufacturing costs are low. Special guide means and stops for the spring which, in known holders, acts as the ejector device may be omitted.

Embodiments of the invention will now be described in greater detail with reference to the accompanying drawings, of which:

Figure 1 is a view from one side, partly in section, of a first embodiment of the invention.

Figure 2 is a view in the direction of the arrow II in Figure 1, showing the holder stacked to form a block with a further, similar holder.

Figure 3 is a view from one side of another embodiment of the invention, and

Figure 4 is a partial view, seen in the direction of the arrow IV in Figure 2.

The holder is in the shape of a rectangular housing which is open on a longer, narrow side to provide an entrance, and is of one-piece construction. The housing consists substantially of an injection-moulded part of a plastics material, preferably polystyrol. A leaf spring 3 is rivetted onto the surface of the base section 4 opposite to the entrance to the housing. The leaf spring 3 is approximately arc-shaped in the unstressed state as shown in Fig. 3: the stressed state of the spring is shown in Figure 1.

The side wall 8 of the housing has approximately U-shaped apertures 16 and, at the free end of each of the tongues 17 formed by the apertures, there is a cam 18 which is approximately semi-circular in

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shape (cf. Figure 2). When the tongue-shaped cam supports 17 are in the rest position, they lie in the plane of the side wall 8, but they are resiliently deflectable 5 when a cassette is moved in or out of the housing. When the cassette is pushed into the housing completely, the cams 18 engage in the tape coil apertures and secure the coils.

- 10 The narrow end wall 6 of the holder has adjacent slots 12 near the side walls 8, 9, so that a tongue 13 is produced. The tongue 13 carries on its free end a lug 14 and a finger grip 15. The lug serves to 15 secure the inserted cassette 5 in the holder counter to the pressure of the spring 3, whilst it can be freed by lateral deflection of the tongue 13—for example by means of finger pressure on the grip 15.
- 20 The side walls 8 and 9 are provided with means for stacking several similar holders. The side wall 9, for this purpose, carries, at each end, a strip 10 on which a dovetail guide 19 is formed; whilst the side wall 25 8 has grooves 11 which correspond to the guide 19. In this way, when similar holders are joined together, gaps 20 are formed between adjacent holders, the width of each gap being determined by the height of the strips 10. Each gap makes it possible for 30 the cams 18 of the adjacent holder to yield, as indicated by dash-dotted lines in Figure 2, when a cassette 5 is pushed in or removed. The profile can be seen in Figure 35 4.

The embodiment shown in Figure 3 differs from that shown in Figures 1, 2 and 4 in that large sections are left out of the walls 8, 9, thus producing a considerable 40 extra saving in material; the housing therefore has only rudimentary walls in the region of the large cassette surfaces and

resembles rather a U-shaped rail with U-profile. When stacking, no distance corresponding to the gap 20 is necessary since, 45 in this case, no cams 18 are provided, however, account must be taken of the disadvantage that the tape coils of the cassette cannot be locked.

WHAT WE CLAIM IS:—

- 50 1. A holder for a tape cassette, comprising a rectangular housing for receiving the cassette, the housing having an entrance on one side through which a cassette 55 may be inserted, an ejector device which biases the cassette in the direction of the entrance, and a locking means to hold the cassette when pushed into the housing, in which the ejector device is a leaf spring 65 fixed inside the housing opposite the entrance and acting directly on the cassette and in which the locking means is an integral extension of the housing, which, in use, engages behind the cassette when 70 pushed into the housing and which is displaceable from the locking position.
2. A holder according to Claim 1, in which stacking means are provided on the housing for the connection together of 75 several similar holders to form a block.
3. A holder according to Claim 1 or 2, in which there are resiliently deflectable cams formed on the housing for securing 80 the reels of the cassette when pushed into the housing.
4. A holder for a tape cassette substantially as herein described with reference to and as illustrated by Figures 1, 2 or 4 or Figure 3 of the accompanying drawings.

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- shape (cf. Figure 2). When the tongue-shaped cam supports 17 are in the rest position, they lie in the plane of the side wall 8, but they are resiliently deflectable when a cassette is moved in or out of the housing. When the cassette is pushed into the housing completely, the cams 18 engage in the tape coil apertures and secure the coils.
- 10 The narrow end wall 6 of the holder has adjacent slots 12 near the side walls 8, 9, so that a tongue 13 is produced. The tongue 13 carries on its free end a lug 14 and a finger grip 15. The lug serves to secure the inserted cassette 5 in the holder counter to the pressure of the spring 3, whilst it can be freed by lateral deflection of the tongue 13—for example by means of finger pressure on the grip 15.
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The embodiment shown in Figure 3 differs from that shown in Figures 1, 2 and 4 in that large sections are left out of the walls 8, 9, thus producing a considerable extra saving in material; the housing therefore has only rudimentary walls in the region of the large cassette surfaces and

resembles rather a U-shaped rail with U-profile. When stacking, no distance corresponding to the gap 20 is necessary since, in this case, no cams 18 are provided, however, account must be taken of the disadvantage that the tape coils of the cassette cannot be locked.

WHAT WE CLAIM IS:—

1. A holder for a tape cassette, comprising a rectangular housing for receiving the cassette, the housing having an entrance on one side through which a cassette may be inserted, an ejector device which biases the cassette in the direction of the entrance, and a locking means to hold the cassette when pushed into the housing, in which the ejector device is a leaf spring fixed inside the housing opposite the entrance and acting directly on the cassette and in which the locking means is an integral extension of the housing, which, in use, engages behind the cassette when pushed into the housing and which is displaceable from the locking position.

2. A holder according to Claim 1, in which stacking means are provided on the housing for the connection together of several similar holders to form a block.

3. A holder according to Claim 1 or 2, in which there are resiliently deflectable cams formed on the housing for securing the reels of the cassette when pushed into the housing.

4. A holder for a tape cassette substantially as herein described with reference to and as illustrated by Figures 1, 2 or 4 or Figure 3 of the accompanying drawings.

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