

- 1 -

REPLACED SHEETS	SG
☐ Description : paged to paged	
☒ Claim(s) : paged ..2... to paged ..4.....	
☒ Drawing(s) : paged ... $\frac{1}{5}$... to paged ... $\frac{5}{5}$	
☒ Abstract : paged ... $\frac{1}{1}$... to paged ...-.....	
DATE OF RECEIPT	

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Cassette holder for magnetic tape cassettes
insertable in the longitudinal direction.

The invention relates to a cassette holder for magnetic tape cassettes insertable in the longitudinal direction, according to the preamble of claim 1.

Containers for storing magnetic tape cassettes are known which have several insertion openings for the longitudinal insertion of magnetic tape cassettes. In the inserted position, a slider receiving the magnetic tape cassette is locked so that the magnetic tape cassette is completely enclosed by the container and a closure flap. Removal of the inserted magnetic tape cassette is then effected in that the slider is unlocked and a spring displaces the slider together with the magnetic tape cassette placed thereon into a removal position. In the removal position, the magnetic tape cassette projects from the insertion opening and can be easily removed.

Such a container with several insertion openings and several sliders, each of which is capable of receiving a magnetic tape cassette, is known from European Patent 0 538 585 A2. Receiving compartments for the longitudinal insertion of magnetic tape cassettes are associated with the individual insertion openings. Mounted on a base plate in each receiving compartment is a lockable slider, on which there are arranged locking means that engage in the reel hubs of

the magnetic tape cassette and are aligned in the insertion direction. The purpose of the locking means is to prevent the reels from being unintentionally turned. Such a cassette holder with a reel-locking facility is especially important when storing magnetic tape cassettes in motor vehicles, since the vibrations occurring in motor vehicles could otherwise lead to unintentional turning of the reels. In the region of each reel hub, this known cassette holder has two laterally offset rocker arms as the locking means; depending on the position of the inserted magnetic tape cassette, either the left-hand or the right-hand rocker arm engages in the reel hub. When a magnetic tape cassette without externally accessible reel hubs is inserted, neither of the rocker arms is effective.

The invention is based on the problem of producing a cassette holder for magnetic tape cassettes insertable in the longitudinal direction, in which laterally displaceable locking means are able to engaged with positional accuracy in the reel hubs.

This problem is solved by the features specified in claim 1. The locking means are mounted on a transversely displaceable sliding element, as a result of which it is possible for the locking means to be aligned exactly with the position of the associated reel hub. The alignment is effected by the enlargement formed on both faces of the magnetic tape cassette, which, depending on the positioning of the magnetic tape cassette, presses on left-hand or right-hand control wedges of the sliding element and displaces the latter together with the locking means mounted thereon into the required position. Control edges on the longitudinally displaceable slider cause the locking means to be pivoted into the locking position when the slider is inserted. The fact that the locking means can be displaced laterally has in

particular the advantage that the locking means can be matched in width to the diameter of the reel hubs, and consequently engage the reel hubs at both lateral edges of the locking means.

A shaft having radially projecting pivoting members at each of its two free ends which projects from both sides of the locking means can be provided as the actuating element for the locking means. The pivoting members thus alter their lateral position in accordance with the positioning of the transversely displaceable sliding element. If the sliding element is in a central position, then the pivoting members of the locking means are inoperative, that is to say, on insertion of a DAT cassette the locking means are not pivoted into a locking position. In fact, on insertion of a DAT cassette, the transversely displaceable sliding element remains in a central position, since such a DAT cassette does not have a projecting enlargement which would cause a lateral displacement of the sliding element.

The transversely displaceable sliding element is preferably located in a recess in the base plate of the cassette holder and is overlapped by a supporting tongue projecting from the longitudinally displaceable slider. On the underside of the supporting tongue there can be control edges which, depending on the position of the transversely displaceable sliding element, co-operate with the pivoting members of the locking means. The supporting tongue thus not only has the function of being the supporting element for an inserted magnetic tape cassette, but also is responsible for actuating the locking means.

Centring elements in the form of inclined faces could also be provided on the longitudinally displaceable slider; in the end position of the extended slider, the centring elements meet the control

wedges of the transversely displaceable sliding element and bring the latter into a central position. In so doing, the trailing edge of the control wedges may serve for positioning of the slider element in the central position, whilst the leading edges of the control wedges, in combination with the enlargements of the magnetic tape cassettes, are provided for transverse displacement of the sliding element.

The cassette holder is preferably in the form of an insert which can be inserted in a container housing and can be joined thereto. As a result of its construction as an insert, it is possible to construct containers having different numbers of receiving compartments for magnetic tape cassettes which are then provided with a corresponding number of identical inserts. Only the container housing needs to be suitably matched to particular requirements in respect of the number of receiving compartments and the external dimensions.

The invention is explained in greater detail hereinafter with reference to an embodiment illustrated in the drawings, in which

Figure 1 shows a cassette holder with a longitudinally displaceable slider and transversely displaceably sliding element, the slider being located in the extended removal position,

Figure 2 shows the cassette holder of Figure 1 with an inserted magnetic tape cassette in the storage position,

Figure 3 shows the cassette holder of Figure 1 without the longitudinally displaceable slider,

Figure 4 shows the cassette holder from below in the position according to Figure 2, but without the base plate, and

Figure 5 shows the cassette holder of Figure 4, but with the magnetic tape cassette rotated through 180° about its longitudinal axis.

The cassette holder illustrated in Figure 1 is in the form of an insert which can be inserted into receiving compartments of a container, not illustrated here. Such a container is known from European Patent No. 0 538 585 A2 mentioned in the introduction.

The cassette holder consists in particular of a base plate 1, a longitudinally displaceable slider 2 and a transversely displaceable sliding element 3. The slider 2 is arranged to be inserted against the force of a spring 4 in the direction of arrow 5 towards the rear wall 6, and locks in a storage position, which is illustrated in Figure 2. In the removal position of the slider 2 illustrated in Figure 1, by means of centring elements 7, 8 in the form of inclined faces the slider presses on the rear side of control wedges 9, 10 that project upwardly from the transversely displaceable sliding element 3. The sliding element 3 is consequently pressed into the middle position illustrated.

On the sliding element 3 there are mounted locking means overlapped by a supporting tongue 11 of the slider 2; from each side of the locking means there projects a shaft with a respective pivoting member 12, 13. These locking means 14, 15 with their shafts 16, 17 are more clearly visible in Figures 2, 4 and 5. In Figure 3, the locking means 14, 15 are located in a lower position, whilst in Figure 4 and Figure 5 and also in Figure 2 the locking means 14, 15 are

illustrated in an upper position, namely the locked position.

To actuate the locking means 14, 15, control edges 18, 19 and 20, 21, which are clearly visible in Figure 5, are provided on the slider 2, or rather on the supporting tongue 11 thereof. The control edges 18, 19 serve to pivot the locking means 14, 15 into the locked position illustrated in that Figure, whilst the control edges 20, 21 serve to restore the locking means 14, 15 to the lower position, illustrated in Figure 1.

Figure 1 furthermore shows that a lateral guide means 22, which serves as a means for insertion of the cassette holder into a container housing, is arranged laterally on the base plate 1.

In the storage position illustrated in Figure 2, the magnetic tape cassette 23 placed in the slider 2 has been inserted so far towards the rear wall 6 that the magnetic tape cassette 23 projects hardly at all at the front side 24 and a housing closure flap, not illustrated here, can be closed. The enlargements 24, 25 projecting from the top and bottom of the magnetic tape cassette 23 are used to position the locking means. As the magnetic tape cassette 23 is inserted, the lower enlargement 25 presses against the control wedge 10 (Figure 1 and Figure 3) and consequently pushes the sliding element 3 into the left-hand position illustrated in Figure 2. Figure 5 illustrates this position from below, but with the base plate 1 omitted.

The locking means 14, 15 engage from below upwards into the reel hubs 26, 27.

If the cassette is rotated about its longitudinal axis through 180° and inserted into the cassette holder, the position illustrated in Figure 4 is obtained, with the sliding element 3 transversely displaced by the enlargement 24 in a manner opposite to

that illustrated in Figure 5. As the magnetic tape cassette 23 is inserted, the enlargement 24 presses the sliding element 3 at the control wedge 9 laterally out of its central position.

In Figure 4 and Figure 5, a catch 28 is arranged on the underside of the slider 2 and, in combination with a so-called push-push locking arrangement, holds the slider 2 in the storage position and releases it again when the magnetic tape cassette is pressed again, so that the slider 2 then moves into the removal position. The push-push locking arrangement is known per se and is not the subject of the present invention and is therefore also not specifically illustrated here.

The cassette holder has means with which it can be inserted into a container housing and can be connected thereto. The lateral guide means 22 and the base plate 1 in particular form part of these means.



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Patent Claims

1. A cassette holder for magnetic tape cassettes insertable in the longitudinal direction, which has locking means that engage in the reel hubs of the magnetic tape cassette and are aligned in the insertion direction, and a base plate on which there is mounted a lockable slider that is arranged to be extended by means of a spring, thus taking the magnetic tape cassette into a removal position, a sliding element having lateral control wedges and displaceable by the magnetic tape cassette transversely to the insertion direction being mounted in the base plate, and which cassette holder has pivoting elements with which the locking means can be pivoted into the reel hubs, characterized in that for each reel hub (26, 27) a locking means (14, 15) is mounted on the transversely displaceable sliding element (3), and on the longitudinally displaceable slider (2) there are arranged control edges (18, 19; 20, 21) which, with the sliding element (3) displaced to one side and on longitudinal displacement of the slider (2), act on a pivoting member (12, 13) projecting from an actuating element of the locking means (14, 15) and thereby pivot the locking means (14, 15).

2. A cassette holder according to claim 1, characterized in that the actuating element of the locking means (14, 15) is a respective shaft (16, 17) which projects from both sides of the associated



locking means (14, 15) and has at its two free ends radially projecting pivoting members (12, 13).

3. A cassette holder according to claim 2, characterized in that the transversely displaceable sliding element (3) is arranged in a recess of the base plate (1) below a supporting tongue (11) projecting from the longitudinally displaceable slider (2), and the control edges (18, 19; 20, 21) are arranged on the underside of the supporting tongue (11).

4. A cassette holder according to one of the preceding claims, characterized in that centring elements (7, 8) in the form of inclined faces are arranged on the longitudinally displaceable slider (2), which elements in the end position of the extended slider (2) meet the control wedges (9, 10) of the sliding element (3) and displace the latter into a central position.

5. A cassette holder according to one of the preceding claims, characterized in that in the central position of the sliding element (3) the control edges (18, 19; 20, 21) are ineffective.

6. A cassette holder according to one of the preceding claims, characterized in that the cassette holder is an insert which on its base plate (1) has means with which it is arranged to be inserted in a container housing and be connected thereto.



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