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P 3129

14th July, 1993

Cassette holder with clamping means.

The invention relates to a cassette holder with clamping means, according to the preamble of claim 1.

Containers having cassette holders for storing magnetic tape cassettes are known in which the magnetic tape cassettes are held by a slider which can be inserted against the force of a spring into the container and can be locked there in a storage position. By pressing the magnetic tape cassette again, the locking means is released, so that the spring pushes the slider and the magnetic tape cassette placed thereon forwards into a removal position. In the removal position, the magnetic tape cassette can be removed by hand. Such a cassette holder and a container for storing magnetic tape cassettes are known from European Patent 0 538 585 A2.

Should such a cassette holder be used, for example in a motor vehicle, then the vibrations occurring during travel can lead to undesirable rattling noises. For that reason, clamping means which clamp the magnetic tape cassettes located in the storage position firmly in the cassette holder can be provided.

The invention is based on the problem of producing a cassette holder with clamping means, in which the clamping means can be operated by the existing spring used for ejection of the magnetic tape cassettes.

This problem is solved by the features specified in claim 1. The spring acts on an actuating element

of the clamping means mounted on the slider so that in the storage position the spring force is able to act by means of this actuating element on the clamping element of the clamping means. In the removal position, the spring no longer presses against the actuating element, so that clamping of the magnetic tape cassette is disabled and the cassette can easily be removed. A wedge-shaped clamping member pivotally mounted on the slider, and which together with the slider forms a one-piece plastics part, is used as the clamping element. The actuating element is in this case a push rod, which presses the wedge-shaped clamping member laterally against the inserted magnetic tape cassette when the slider is in the storage position. The wedge-shaped clamping member can be embodied especially simply in this manner, the plastics material being sufficiently resilient to allow on the one hand a deflection of the wedge-shaped clamping member and on the other hand, in the removal position, automatic return of the wedge-shaped clamping member.

It is especially advantageous to use a torsion spring as the spring, which bears with one spring arm on the rear side of the cassette holder, whilst the other spring arm acts on the actuating element. Here, the spring arm acting on the actuating element projects beyond this element, so that its free end rests against the rear side of the slider. As a result, although in the removal position there is still a pressure force coming from the spring on the slider, the actuating element is located in a neutral position without being affected by a spring force.

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, in which the slider is located in the removal position,

Figure 2 shows the cassette holder of Figure 1, but with the slider in the storage position, and

Figure 3 shows a container in which six cassette holders according to Figure 1 can be inserted.

The cassette holder illustrated in Figure 1 has a base plate 1 and a slider 2 displaceable in the longitudinal direction 3. The slider 2 is located in the removal position in which a magnetic tape cassette 4 held in the slider 2 projects at the front side 5.

On the slider 2 there is a clamping means, consisting of a push rod 6 and a wedge-shaped clamping member 7. The push rod forms the actuating element of the clamping means, whilst the wedge-shaped clamping member 7 represents the clamping element of the clamping means. A spring 8 in the form of a torsion spring acts on the rear end of the push rod 6. At the rear, the spring 8 is secured with one of its two spring arms 9, 10 to a rear wall 11, whilst the other spring arm engages through a receiving part 12 of the push rod 6. The free end 13 of the spring arm 10 lies against the rear side 14 (not visible here) of the slider 2.

In Figure 1, the push rod 6 is located in a neutral position, so that its front end 15 does not come into contact with the wedge-shaped clamping member 7. The wedge-shaped clamping member 7 is thus also in a neutral position, so that the magnetic tape cassette 4 can be removed unhindered from the slider 2 in the direction of arrow 16 or reinserted again in the reverse direction.

In Figure 2, the magnetic tape cassette 4, and consequently also the slider 2, are in the storage position. The slider 2 is in this position locked in a locking arrangement 17 (Figure 1). In this position, the spring arm 10 presses the push rod 6 forwards against the wedge-shaped clamping member 7, which thus is pressed at its bevelled surface 18 by the front end 15 of the push rod 6 against the upper side 19 of the magnetic tape cassette 4. The push rod 6 is guided in a longitudinal channel 20 of the slider 2. In Figure 2 it is clear that the receiving part 12 projecting from the rear of the push rod projects only slightly from the rear side of the slider 2.

Multiples of the cassette holder shown in Figure 1 and Figure 2 can be used in a container 21, which is illustrated in Figure 3. The container 21 has altogether six receiving compartments 22, each of which is able to accommodate a cassette holder. The magnetic tape cassette 44' illustrated in Figure 3 is located in the removal position, as also illustrated in Figure 1. Through insertion of the magnetic tape cassette 44, it reaches the storage position, in which the slider 2 (Figure 2) is locked by means of the locking arrangement 17 (Figure 1). By renewed brief pressure on the magnetic tape cassette 44, the locking arrangement 17 is unlocked again and the magnetic tape cassette 44 is pushed out into the removal position by the spring 8.

In the embodiment illustrated in Figure 1 and Figure 2, the slider 2, together with the wedge-shaped clamping member 7, is in the form of a one-piece plastics part. A U-shaped aperture 23 surrounds the wedge-shaped clamping member 7, so that this is resiliently pivotable.

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Patent Claims

1. A cassette holder with clamping means, which has a slider that is arranged to be pushed back on a base plate into a storage position against the force of a spring, which slider receives a magnetic tape cassette or similar sound recording medium and which is arranged to be locked in the storage position, a clamping means clamping the magnetic tape cassette firmly in the storage position to avoid rattling noises when vibrations occur, characterized in that the spring (8) acts on an actuating element (6) of the clamping means mounted on the slider (2), and in the storage position the actuating element (6) presses against a clamping element (7) resting laterally against the inserted magnetic tape cassette (4).

2. A cassette holder according to claim 1, characterized in that the actuating element is a push rod (6) running in the direction of travel of the slider (2), which push rod is displaceable towards a wedge-shaped clamping member (7) forming the clamping element and arranged transversely on the slider (2) and pivotable towards the magnetic tape cassette (4).

3. A cassette holder according to claim 2, characterized in that the wedge-shaped clamping member (7), together with the slider (2), forms a one-piece plastics part and the wedge-shaped clamping member (7) is surrounded by a U-shaped aperture.

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4. A cassette holder according to one of the preceding claims, characterized in that the actuating element (7)¹ is guided in a longitudinal channel (20) of the slider (2) and projects at the rear side (14) thereof with a receiving part for the spring (8).

5. A cassette holder according to one of the preceding claims, characterized in that, as the spring (8), a torsion spring bears with one spring arm (9) on the rear side of the cassette holder and with its other spring arm (10) bears on the actuating element (6), the free end (13) of the other spring arm (10) projecting beyond the actuating element (6) and resting against the rear side (14) of the slider (2).

6. A cassette holder according to one of the preceding claims, characterized in that in the removal position of the slider (2) the actuating element (6) releases the clamping element (7) so that the latter is located in a neutral position.

¹. Presumably in error for 6 - translator.

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