In magnetic recorders and/or reproducers employing tape-shaped sound carriers, a device for the return travel of the sound carrier is not only required for rewinding the reproduced supply of tape, but is also used in magnetic recorders and/or reproducers especially designed for dictating purposes, so that previous dictation can be played back if desired, to correct the whole or part thereof.

In order to simplify manipulations and protect the sound carrier as much as possible, it is housed in a magazine. For magazines which are only capable of containing or rewinding one coil of the sound carrier, and which consequently are smaller and more easy to handle than magazines for two coils, a construction has been proposed in application Serial No. 125,693, the name of Friedrich Lax, new Patent No. 5,119,574, for the formation of a coil on a special flanged reel housed in a magazine whereby a tag attached to the beginning of the sound carrier need only be introduced into an aperture in the magazine (utilized as a take-up magazine). Once the tag is inside the aperture, it is taken along by the rotating take-up reel, conducted to the core and retained there. The introduction of the tag into the aperture of the magazine used as a take-up magazine may be effected manually but devices have also been proposed to effect this wholly or partially automatically (copingend application Serial No. 114,693 in the name of Friedrich Lax and Gerald Missiezel in the name of Friedrich Lax and Franz Missiezel, new Patent No. 3,104,843).

If an apparatus equipped with such magazines is used for dictating purposes, it is undesirable, during the return travel of the sound carrier in order to listen to previously dictated text, that the tag leaves the take-up magazine since in that case it would have to be re-introduced into the take-up magazine for further dictation. This means loss of time and an unpleasant interruption.

According to the invention, a magnetic recorder and/or reproducer, in particular a dictating apparatus of the type noted above, is characterized in that at the inlet aperture of the take-up magazine a blocking member is provided which is coupled to the means for initiating the return travel of the sound carrier, whereby the escape of a tag inside the take-up magazine can be blocked or prevented when not desired.

In order that this blocking member does not hamper rewinding of a completely recorded tape, a switch is provided whereby operation of the blocking member is coupled only to the means for initiating the return travel of the sound carrier can be removed at will. If the apparatus comprises a rapid rewind travel of the sound carrier and a slow return travel for dictating purposes, the blocking member preferably is coupled only to the means for switching on the slow return travel of the sound carrier.

When using take-up magazines in which a spring is provided in the magazine aperture to removably secure a tag in the aperture, the spring can advantageously be used to be immovably blocked by the blocking member in its aperture closing position.

In order that the invention may readily be carried into effect, one embodiment thereof will now be described more fully, by way of example, with reference to the accompanying drawing, in which—

FIG. 1 diagrammatically shows a known arrangement for effecting return travel of the tape of a dictating machine.

FIG. 2 illustrates an arrangement for blocking a magazine according to the invention utilizing the known arrangement shown in FIG. 1.

FIG. 3 is a partial view illustrating a modification of the arrangement shown in FIG. 2.

From FIG. 1 it will be seen that during return travel of the sound carrier a driving wheel 1 for the turntable of the supply spool is driven by an intermediate wheel 2 which is driven via a belt 4 by a driving wheel 3 provided on the shaft of a motor. The intermediate wheel 2 is journaled on a lever 6 which can be pivoted about the shaft 5, the rest position of said lever being determined by a spring 7 and a stop member 8. The lever 6 is pivoted to its operating position, in which the intermediate wheel 2 drives the driving wheel 1 as shown in FIG. 1, by an electromagnet 9, the armature 10 of which is connected to the lever 6 via a cable 11. A rod 12 which is hingely connected to the lever 6 effects the coupling to the blocking member according to the invention, which member is shown in FIG. 2.

Referring now to FIGS. 1, 2, a winding or take-up magazine 13, as soon as it is laid on the apparatus, assumes the position shown with respect to the structural parts of the blocking member, which will be described hereinafter. The magazine consists of two symmetric halves. In the figure the magazine is shown with the upper side removed, so that its interior can be viewed freely. The two halves of the magazine are provided with suitable recesses for housing a flanged reel 14. By means of an annular rim 15, the reel is rotatably retained in an aperture 16 of the magazine. The reel is connected in known manner (aperture 17) to a spool table when the magazine is laid on the apparatus. The position of the magazine is determined by two pins of the apparatus which are inserted in apertures 18. The take-up reel 14 comprises a recess 19 having slanting edges to take-up the tape 20 having a tag 21. In the example shown, the tag 21 has the shape of a cylinder, the width of which exceeds the external distance of the flanges of the reel 14. For introducing the tag 21 into the interior of the magazine, the channel-like aperture 22 is provided. Channel 22 is separated from the reel 14 by a spring 23. The spring 23 to a certain extent constitutes a continuation of the fixed parts of the housing bounding the space occupied by the reel. The spring has a prestension inwardly, in which, however, a stop member 24 determines its innermost position. If the tag 21 is introduced through the channel 22, after the spring has been pulled outwards by means (not shown) to open the channel aperture, the tag 21, in accordance with the position of the reel 14, is either introduced into the recess 19 or it impacts against the edges of the flanges of the reel, against which it is forced by the spring 23 which is then released again. After a period of anti-clockwise rotating of reel 14, the tag 21 is taken along by the slanting edges of the recess 19 and conducted into the notch 25 of the reel core. When rewinding and removing tape from reel 14, the tag 21 leaves the notch 25, finally assuming the position shown in FIG. 2 and would force the spring 23 outwards and leave the magazine through the aperture 22 if rewinding continued. It is noted that the tag 21 may also be wedge-shaped, so that upon introducing the magazine, the spring is forced away by the tag and the means to withdraw the spring noted above may consequently be omitted.

In order that the tag 21 cannot leave the magazine 13, a lever 27 which can be swung about the shaft 26 is provided, the rest position of which is determined by a spring 28 and a stop member 29. When the return travel is initiated, i.e., tape is unwound from the take-up reel
for replay the lever 27 presses against the end 24 of the spring 23, so that the spring cannot recede, as a result of which the passage of the tag 21 through the aperture 22 is blocked. Thus the lever 27 acts as a blocking member in cooperation with spring 23 and the aperture 22. To connect this blocking member to the device for the return travel, the said rod 12 is provided with a notch 30 which engages the lever 27. When the recorder is switching to return travel, the rod 12 moves to the left (attraction of the armature 10 of the magnet 9) and the members assume the position shown in FIG. 2.

In order to render the blocking member inoperative for rewinding, a slide 31 is provided, the two final positions of which are determined, for example, by stop members or the like. If the slide 31 is in the position shown in FIG. 2, it maintains engagement between the rod 12 and the lever 27, while in the other final position, the rod 12 is pulled by the spring 32, so that engagement between rod 12 and the lever 27 is removed. Any suitable means may be provided for moving the slide 31 as indicated in FIG. 2 by arrow 31a.

It will be clear that a good many other constructions are possible within the scope of the invention. For example, reference is had to FIG. 3 in which the lever 27 may itself block the channel 22. It may also be controlled directly, i.e., mechanically connected with the switch with which return travel is initiated (not shown). If a rapid return travel for rewinding and a slow return travel for dictating are available, the blocking device is only actuated upon slow return travel so that the tag is retained in a position in which it can be taken along again by the reel when the forward travel is switched on again.

It is noted that for explaining the invention a very simple embodiment of the magazine was chosen. By a particular construction of the tag 21, the aperture 22, the spring 23, and the recess 19 in the reel, considerable improvement of the magazine function can be obtained as disclosed in our application Serial No. 156,275. In this case it is not necessary to be limited to the particular shape of the spring 23. Even no spring at all in the magazine will do. The flexible element principally required for the magazine function may also be provided, for example, on the tag.

What is claimed is:

1. In a magnetic tape dictating machine having drive means, the combination comprising, a take-up magazine having a rotatable reel therein, an aperture in said drive magazine said reel comprising a core and a pair of obliquely slotted flanges, a magnetic tape having a tag at one end receivable in said aperture of said magazine and engaged by said slotted flanges for winding said tape on said reel, resilient means in said magazine biased to normally close said aperture and movable by said tag to open said aperture, a blocking lever on said machine operable for engaging said resilient means to prevent movement of said resilient means whereby said aperture is closed against passage of said tag, a first means on said machine for moving said blocking lever into and out of engagement with said resilient means, and a second means on said machine for holding said first means in an operative position with said blocking lever.

2. A magnetic tape dictating machine according to claim 1, wherein said first means comprises a coupling lever having one end notched for receiving said blocking lever, the other end of said coupling lever being connected with the drive means of said machine for unwinding tape from said take-up reel.

3. A magnetic tape dictating machine according to claim 2, wherein said other end of the coupling lever is pivotally connected with said drive means and said one end is normally biased away from said blocking lever for removing said notch from said blocking lever, and said second means comprises a movable slide for holding said coupling lever in operative position with said blocking lever.

4. In a magnetic tape dictating machine having a rewind mechanism, the combination comprising; a take-up magazine having a rotatable reel therein, an aperture in said magazine, a magnetic tape having a tag at one end receivable in said aperture and engageable by said reel for winding said tape on said reel, means movably mounted on said magazine and operatively connected with said magazine, said means having a first position in which said aperture is open for passage of said tag therethrough and a second position in which said aperture is closed against passage of said tag but open for passing said tape therethrough, means for moving said first named means between said first and second positions, and means connecting said last named means with the rewind mechanism of said machine for moving said first named means during rewind operation of said machine to said first position.

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MERVIN STEIN, Primary Examiner.

HARRISON R. MOSELEY, Examiner.
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,195,824

Friedrich Laa et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 48, strike out "drive".

Signed and sealed this 8th day of March 1966.

(SEAL)

Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents