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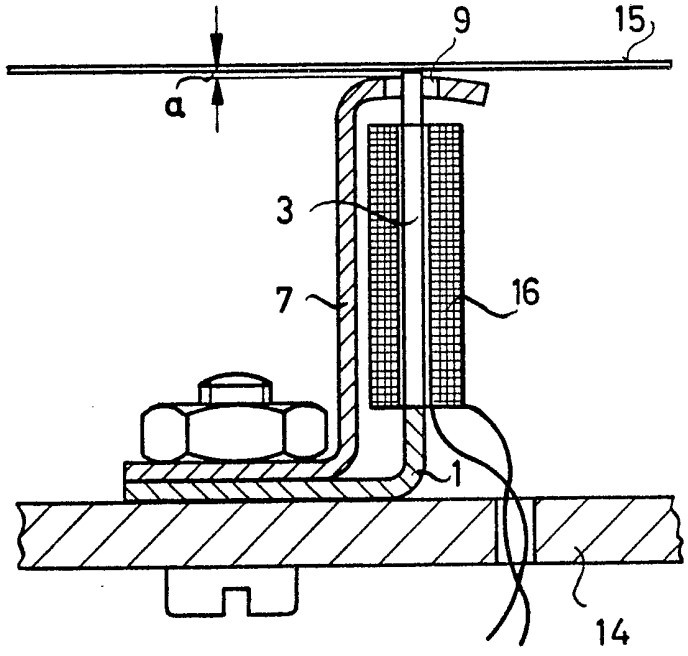
(54) **Recording device**

(57) A recording device comprising a recording comb is described by means of which visually recognizable recordings can be made on a record carrier by magnetic fields. The recording comb consists of two bent magnetic parts 1 and 7, which are fastened on a circuit plate 14 so that the teeth 3 of the first bent part 1 project through the cut-outs 9 in the other bent part 7 leaving a gap all around. Coils 16 are attributed to the individual teeth 3.

The recording device is to be used for instance in a tachograph.

FIG. 5



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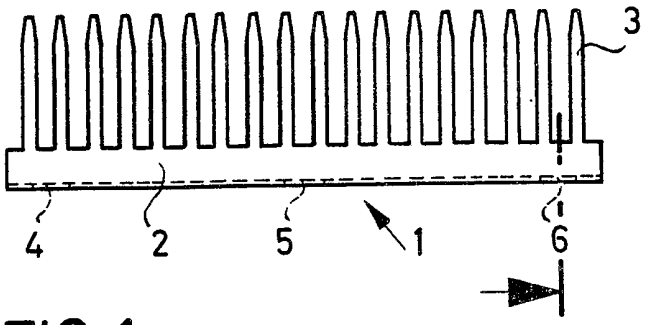


FIG. 1

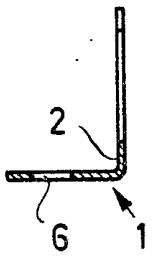
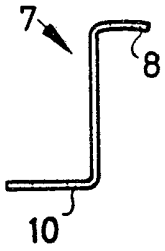


FIG. 2

FIG. 4



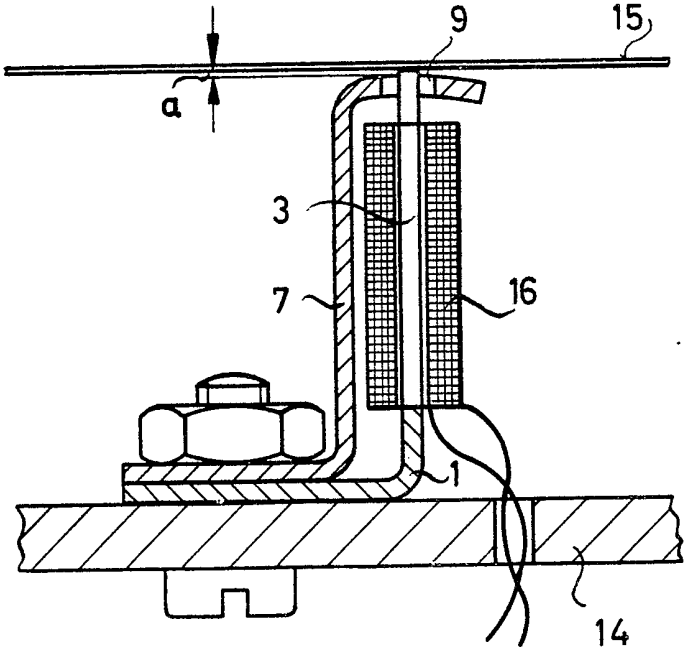


FIG. 5

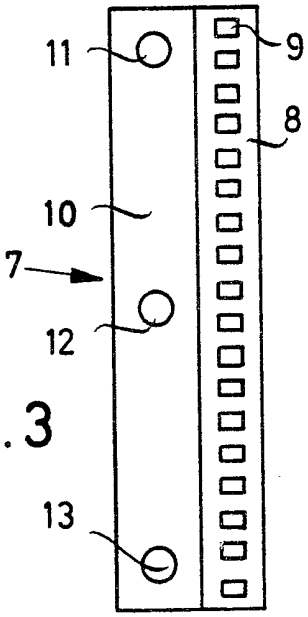


FIG. 3

SPECIFICATION
Recording device

The invention relates to a recording device for a record carrier to be driven in dependence on time or distance and to be modified by magnetic fields, especially for a record carrier which allows for visually recognizable recordings of measured values to be made by means of magnetic recording means which is in form of a fast recording comb.

Recording devices in which as recording means individual recording electrodes or such like are being used which are in the form of recording combs are known as such and are particularly used for such recording tasks in which on the one hand a quick visual and a simple machine reading of the recordings is required, and in which on the other hand the discontinuity of the recordings because of quantization can be coped with through a corresponding selection of the quantization steps. With special advantage such recording arrangements can be used in recording devices having an automatic deletion of the recordings.

In such recording devices the development of the measured value is particularly interesting immediately before a certain event so that older recordings could be destroyed. This restriction allows for the recordings to be extended and therefore offers a very high resolution over the time.

As a typical example for such a recording device a so called accident recording device shall be mentioned which is to be used in motor vehicles and which is especially used to record the speed of a vehicle over that distance which was last covered by the vehicle. Such a recording device is naturally subjected to very rough operating conditions especially as regards external magnetic fields, blows and temperature load, so that the use of a recording comb as a recording device can be fully realized as compared with the use of one individual recording means moved under control of a recording pencil. Apart from that for such a recording device the conditions of production in big series have to be taken into consideration, that means the construction must be easy to be mounted, there must be few and simple parts, which conditions are also in an advantageous manner to be fulfilled by using a recording comb especially in the form according to the invention.

For a recording procedure using a record carrier to be modified by magnetic fields which allows for visually reading the recordings which is relatively well suited for the above purpose it is assumed that the structure and the operation of such a recording material is known. According to the invention it was the object to design a recording comb which is on the one hand adapted to the recording procedure chosen and on the other hand to the condition of being produced in big series.

To meet the object of the invention, the recording comb consists of a first toothed bent part of ferromagnetic material and a second bent part made also of ferromagnetic material and provided with cut-outs to cooperate with the teeth of the first part so that the teeth of the first part enter through the cut-outs of the second bent part without contact and that they project by a certain measure beyond the cut-outs, both bent parts being fastened in the recording device so as to form a magnetic circle and that on the teeth of the first bent part is arranged at least one control coil each.

An embodiment of the invention is also characterized in that both bent parts are together fastened in a carrier to be inserted into the recording device.

The recording comb according to the invention has because of the special form of the magnetic return path apart from the already mentioned advantages the additional advantage that the light seams following the recording track give an improved contrast against the remaining surface of the record carrier. As a simplification a description of this effect in this connection is avoided, however, attention is drawn to DE-AS 25 20 581.

In the following the invention shall now be explained in detail with reference to the enclosed drawings.

It shows in

FIGS. 1 and 2 a lateral view and a section through the first bent part,

FIGS. 3 and 4 a top view and a section through the second bent part,

FIG. 5 a section through the recording arrangement.

The first bent part 1 as may be seen from FIGS. 1 and 2, is a sheet iron part bent essentially at right angles and made of ferromagnetic material of very low remanence. It has a leg 2 having teeth like a comb. The teeth — one of which has marked by the reference numeral 3 — are preferably made with rounded edges and suitably slimmed to provide for the recording points. Bores 4, 5 and 6 serve to fasten the bent part 1.

The other (second) bent part 7, which is shown in FIGS. 3 and 4, serves as a magnetic return and is preferably made of the same material as the bent part 1. At one of its legs 8 it is provided with cut-outs corresponding in number to the teeth 3 of part 1, one of the cut-outs being provided with the reference numeral 9. The other leg 10 at the bent part 7 serves by means of bores 11, 12, 13 which are preferably adapted to the bores in the bent part 1 to fasten the bent part 7.

As may be seen from FIG. 5 the bent parts 1 and 7 are fastened by means of common screws to a circuit plate 14 to be inserted into the recording device. The arrangement is such, that the teeth 3 of the first bent part projects through the cut-outs 9 of the second bent part 7 leaving a certain gap all around and so that they protrude by a certain measure "a" above the cut-outs 9 whilst the distance of the points of the teeth 3 from the record carrier 15 is as small as possible.

As is also shown in FIG. 5 the coils 16 are

mounted on the teeth 3 of bent part 1 which serve for the necessary excitation for recording purposes. They can be made as self-composed round coils made of lacquered wire having a relatively big proportion of their length to their diameter.

CLAIMS

1. A recording device for a record carrier to be driven in dependence on time or distance and to be modified by magnetic fields, especially for a record carrier which by means of magnetic recording means allows for visually recognizable recordings of measured values comprising a firmly arranged recording comb

characterized in that

the recording comb consists of a first comb like toothed bent part (1) made of ferromagnetic material and a second bent part also made of ferromagnetic material which has cut-outs (9) attributed to the teeth (3) of the first part so that the teeth (3) of the first part (1) project through the cut-outs (9) of the second part without contact and protrude above the cut-outs (9) by a certain distance, that both bent parts (1, 7) are fastened in the recording device so as to form a magnetic circle and that the teeth (3) of the first bent part (1) are each provided with at least one control coil (16).

2. A recording device according to Claim 1, characterized in that

both bent parts (1, 7) are commonly fastened on a carrier (14) to be mounted in the recording device.

3. A recording device substantially as described herein with reference to the accompanying drawings.

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