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HELIX MOUNTING SYSTEM

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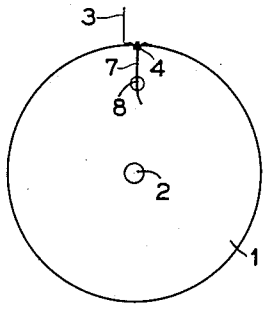


FIG. 2.

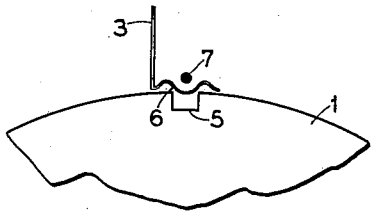


FIG. 3.

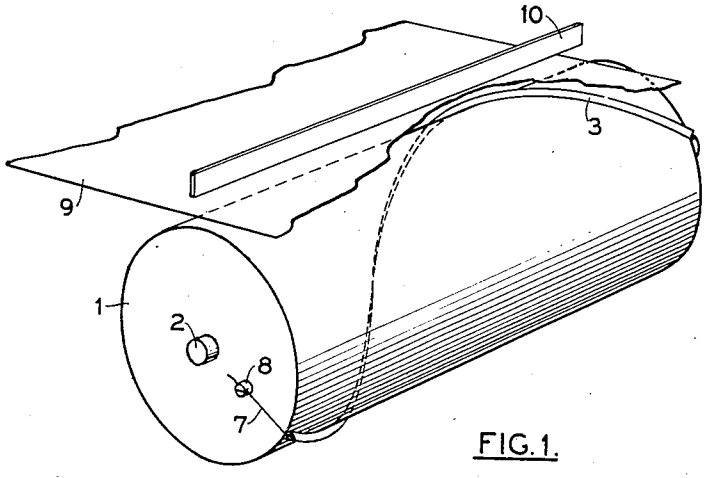


FIG. 1.

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HELIX MOUNTING SYSTEM

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4 Claims. (Cl. 346—101)

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The present invention concerns facsimile recorders and, in particular, electrodes for facsimile recorders and the like.

The term facsimile is commonly applied to the art of transmission of graphic material to a distant point over wire or radio links and through the medium of electrical signals representing density variations of a subject copy. The subject copy to be transmitted is usually scanned point by point, line by line, by a small spot of light which is reflected from the copy into a photoelectric cell where density variations in the copy induce electrical signal variations. These signal variations are amplified and conveyed to a distant point by suitable means. At the receiving point the electrical signal variations may be reconverted into graphic copy by a recorder which scans, point by point and line by line, a sheet of sensitized material. A convenient recording sheet is an electrolytically sensitive sheet which produces density variations in accordance with variations in a recording electrical current. The scanning of the sheet may be conveniently accomplished by means of a rotating helical electrode intersecting a printer blade electrode with a recording sheet moved at a constant rate between the two electrodes.

In the past various forms of helical electrodes have been utilized. One of the simplest forms is a steel wire wrapped around a drum to form a helix. The wire helix is capable of giving good results for a short period of time but upon wearing its area of intersection with the linear electrode will increase causing the recorded copy to lose detail. A better form of helical electrode is a thin strip of metal mounted edgewise across the drum to form the helix. When a thin strip of metal is used for the helix difficulties are encountered in mounting and particularly in providing for removal or interchanging of the electrode. The present invention concerns a helical electrode presenting a fine edge at the recording point which may be readily mounted and quickly and easily changed. The electrode of the present invention is formed from a thin strip of metal which is bent substantially at right angles forming a foot and this foot is formed in such a manner as to be readily mounted upon a slot in the supporting drum and which may be drawn accurately and securely in place by means of a wire fastened across the foot from one end of the drum to the other.

One object of the present invention is to provide a mounting means that is easily, quickly

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and accurately mounted in any predetermined position.

Another object of the present invention is to provide a helical electrode presenting a fine edge at the recording point which may be readily mounted upon the helix drum.

Still another object of the present invention is to provide a helical electrode having a raised recording edge which may be quickly and accurately aligned upon the helix drum.

A still further object of the present invention is to provide a helical electrode which is simple to manufacture, simple to mount and readily interchangeable.

These and other objects of the present invention will be apparent from the detailed description of the invention given in connection with the various figures of the drawings.

In the drawings:

Fig. 1 shows a simplified drawing of a facsimile recorder employing a helical electrode and a linear electrode utilizing the method and apparatus of the present invention.

Fig. 2 shows an end view of the helical electrode mounting according to the present invention.

Fig. 3 shows an enlarged view of the end of the helical electrode according to the present invention.

Fig. 1 shows a simplified view of a facsimile recorder including a rotatable drum 1 mounted on a shaft 2 and carrying a helical electrode 3 which cooperates with a linear electrode 10 to record upon a recording sheet 9. Helical electrodes 3 consists of a thin strip of metal bent in the form of an L with a foot for mounting. A mounting wire 7 passes around the drum pulling this foot into a slot on the surface of drum 1. Wire 7 is fastened by a mounting screw 8 which may be turned to increase the tension on the wire.

Fig. 2 shows an end view of drum 1 mounted on shaft 2 carrying helix 3. This view shows the contour of slot 4 on the surface of drum 1 for receiving the mounting foot of helix 3 and also shows how wire 7 passes along the foot of electrode 3 drawing it into slot 4 for proper alignment.

The foot of electrode 3 is given a wave shape forming a ridge on the under surface which may be drawn into slot 4 and two inverted ridges on either side of the mounting wire which provide some resilience to control the rigidity of the mounting. When wire 7 is drawn tight across the foot of electrode 3 it forces one of the ridges of the foot into slot 4 by an amount depending

upon the tension put upon wire 7. This brings electrode 3 into proper alignment and the resilience of the electrode and mounting hold it in place.

Fig. 3 shows an enlarged view in which the slot cut in the surface of drum 1 is designated as 5. The foot of electrode 3 is designated as 6 and the mounting wire is shown at 7. It will be clear from this figure how wire 7 draws the foot of electrode 3 into slot 5 forcing it into accurate alignment.

Before helical electrode 3 is mounted upon the drum, it is in the form of a straight or coiled strip having the formed foot. A new electrode may be readily mounted merely by cutting a piece of the strip at the proper length, releasing wire 7 to remove the old electrode, fastening the new electrode loosely under the wire around the drum, and then drawing the wire tight by means of screw 8 in Fig. 1. The changing of the electrode may be quickly accomplished and a new electrode readily brought into accurate alignment as described above. This system of electrode mounting is simple, accurate and inexpensive since it requires only a simple slot cut in the surface of drum 1, a piece of wire, and a readily formed helix blade cut the proper length. No complicated or expensive holding or mounting means is required and the result is an accurately aligned and raised helix of simple construction.

Though a method of mounting a helical electrode has been described it will be immediately evident that the method of and means for mounting presented may be adapted to any usage wherein one object is to be mounted upon another. It will also be evident that the particular shaping of the foot of the mounting section or the recess in the mounting surface is not critical and any combination of shaping, recesses, guides or similar devices may be used to carry out the invention. In addition it is not essential that the foot section or base and the upright be formed from one piece of material as any method of attaching the upright to the base may be employed.

While only one form of the present invention has been shown and described many modifications will be apparent to those skilled in the art within the spirit and scope of the invention as set forth in the appended claims.

What is claimed is:

1. In a facsimile recorder the combination of a drum and a helical electrode mounted on said drum, said helical electrode being composed of thin strip material bent longitudinally at right angles to form a foot and an upright section, a lateral wave shape with a downwardly extending ridge formed in said foot, said drum having a slot formed helically along its surface, said ridge of said foot adapted to seat in said slot with the outer extremities of said foot resting against the surface of said drum, a securing means attached to said helical electrode and said drum to force said ridge into said slot against the spring action of the outer extremities of said foot.

2. In a facsimile recorder, the combination of a drum, a helical electrode composed of thin strip material bent longitudinally at right angles to form a foot and an upright section, a lateral wave shape with a downwardly extending ridge formed in said foot, said drum having a slot formed helically along its surface, said ridge of said foot adapted to seat in said slot with the outer extremities of said foot resting against the surface of said drum, and a wire set in the valley formed by the underside of said ridge and attached to said drum to force said ridge into said slot when tightened.

3. A helical electrode for use in a facsimile recorder in cooperation with a linear electrode comprising a drum provided with a helical slot, a strip of sheet metal bent longitudinally at right angles to form a foot and an upright section, said foot being formed in a lateral wave shape with a downwardly extending intermediate portion adapted for engagement in the helical slot in said drum, a wire set in the valley of said downwardly extending portion, and fastening means for tightly fixing the ends of said wire to the ends of said drum, whereby said formed strip is positively located in helical fashion on the drum.

4. For use in a facsimile recorder, an electrode adapted to be removably secured by a wire to a drum having a helical slot on the surface thereof, comprising a strip of sheet metal bent longitudinally substantially at right angles to form a foot section and an upright section, said foot section being formed in a lateral wave shape with downwardly extending edge and intermediate portions, said downwardly extending intermediate portion solely being adapted for engagement in the helical slot in said drum, whereby wire fastening means may be set in the valley of the intermediate portion of said foot section and tightened to positively locate said strip in helical fashion on said drum.

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