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BY A. P. C.

H. WESTERKAMP  
BRIDGING MATRIX FOR ENDLESS SOUND BANDS AND  
METHOD OF PRODUCING SUCH BANDS  
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Fig. 1.

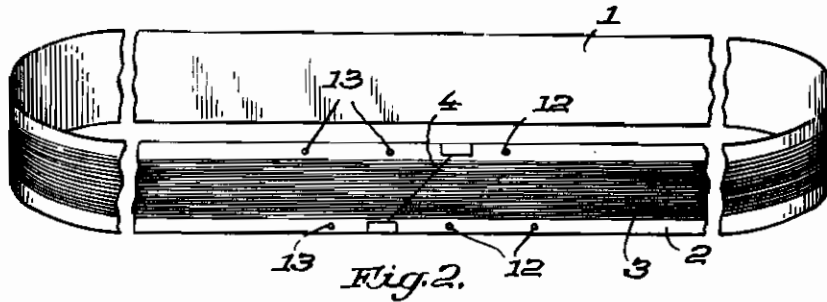


Fig. 2.

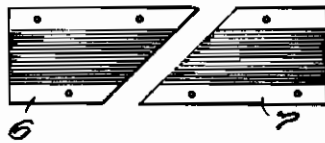
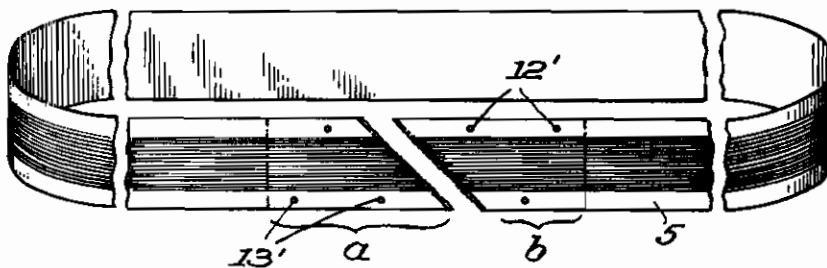


Fig. 3.



Fig. 4.

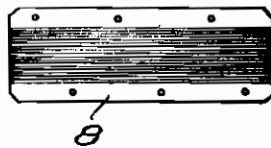


Fig. 5.

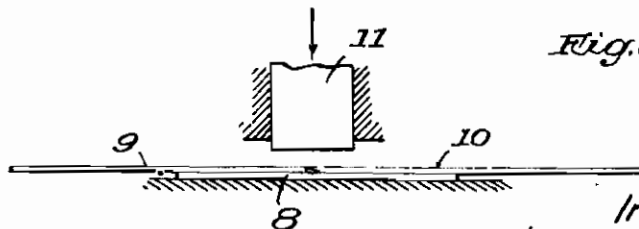


Fig. 6.

Inventor:  
Hugo Westerkamp  
By: Mason, Porter  
Attorneys

# ALIEN PROPERTY CUSTODIAN

## BRIDGING MATRIX FOR ENDLESS SOUND BANDS AND METHOD OF PRODUCING SUCH BANDS

Hugo Westerkamp, Kohn-Poll, Germany; vested in the Alien Property Custodian

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The invention relates to a method of producing endless sound bands with several sound tracks running parallel to the edge of the band and being mechanically reproducible, and to a device for carrying out this method.

It is known to produce endless sound bands of said kind by connecting the ends of a bounded sound band with the aid of a bridging matrix. The known method proposes to produce the bridging matrix from the original sound band, before a pressing or stamping matrix is made of the original. In most cases, this cannot be carried out, because the sound record on the original sound band is completely destroyed in the part from which the bridging matrix has been produced.

According to the invention, the ends of the bounded sound band with a number of parallel sound tracks produced by a pressing or stamping process are connected by means of a bridging matrix which has been produced from the original sound band or from a copy thereof.

Advantageously, the bridging matrix is obtained by producing patrices from the ends of the original matrix, which patrices are cut, fitted together, soldered, and engraved with continuous sound tracks, and from the one piece obtained in this manner, the bridging matrix is produced, for example, by a galvanoplastic moulding process.

This bridging matrix may be manually brought to engage the sound tracks at the ends of the duplicated bounded sound band, which ends are fitted together or are arranged so as to overlap each other for the purpose of being connected, whereupon the sound grooves at each end are brought into engagement with the corresponding sound ribs of the bridging matrix. But this bringing into engagement is rather difficult and in order to make it easier, the original sound band is provided, according to the invention, on both sides of the cut part outside the sound track bundle with marks, for example in the shape of grains, which are formed in producing the pressing matrix and the bounded sound band made from this matrix as well as in producing the bridging matrix, the marks formed on the ends of the sound band being brought to engage the corresponding marks formed in the bridging matrix when connecting the ends of the sound band.

An example of the method according to the invention is diagrammatically illustrated in the accompanying drawing, in which:

Fig. 1 shows an endless original sound band constituting the starting material for the method

according to the invention. The original sound band consists, for example, of a wax band, i. e. a carrier layer covered with a wax layer, into which a sound groove is continuously cut in known manner, this sound groove having a length amounting to a plurality of the length of the sound band and running parallel to the edge of the band. 1 is the carrier layer of the original sound band, 2 is the wax layer, and 3 is the sound groove cut into the wax layer.

From the endless original sound band there are produced bounded sound bands in series by stamping, pressing, casting or the like by means of a matrix. For this purpose, the endless original sound band is cut for example at 4 so as to obtain a bounded band, from which is made, for example by a galvanoplastic process, a bounded original matrix 5 (Fig. 2) serving to produce a not illustrated bounded matrix which, on the other hand, serves to produce a bounded pressing or stamping matrix.

By cutting the endless original sound band, the sound tracks 3 have been interrupted; the cutting of the original sound band, and especially the production of the matrix and of the patrix, result in a small loss of the band and, consequently, in a loss of a part of the sound record so that, when the ends of the sound bands produced in series are fitted together, the associated sound tracks will not exactly run in the same lines any more. But it is absolutely necessary that the sound tracks should run exactly in the same lines so as to prevent the reproducing needle from jumping out of the sound track or entering another sound track.

In order to prevent this, the ends of the sound band are connected according to the invention by means of a bridging matrix which is produced in the following manner:

Patrices are produced from each of the ends *a* and *b* of the original matrix 5 (Fig. 2), for example by a galvanoplastic process; these two patrices are shown at 6 and 7 in Fig. 3. The edges of the ends of the band 5, originally irregular, owing to the galvanoplastic production, are advantageously cut straight before being placed in the galvanic bath. The parts 6 and 7 of the patrices are then aligned with the sound tracks, fitted and soldered together. The aligning is advantageously effected by means of an optical magnifying method. After the parts 6 and 7 of the patrix have been soldered together or connected in some other manner so as to form one piece, the sound tracks, though aligned, being still separated by the soldering place or the like, are

connected by engraving connecting tracks so as to obtain continuous sound tracks. Fig. 4 shows the connected parts 6 and 7 of the matrix with one half of the sound tracks connected by engraved connecting tracks and the other half of the sound tracks still separated by the soldering place or the like.

Thereupon the connected parts 6 and 7 of the matrix are used to produce, also by a galvanoplastic process, a pressing or stamping matrix 8 (Fig. 5) which represents the desired bridging matrix.

The ends of the bounded sound band produced in series, for example by a pressing or stamping process, are now fitted together on the bridging matrix in such a manner that the sound grooves on the ends of the band engage the corresponding parts of the ribs of the bridging matrix, as far as fitting parts exist on the two ends of the band, on the one hand, and on the bridging matrix, on the other hand. This bringing into engagement, may be effected manually. The free ends of the band are advantageously cut sloping according to the original separating line 4 (Fig. 1) and are, preferably chamfered, brought to overlap each other, as illustrated in Fig. 6, in which the bridging matrix is again marked 8 and the ends of the band are marked 9 and 10. By applying heat and pressure, the ends of the band are combined by means of a stamp 11 so as to form an endless band. In this combining process, the connecting lines of the sound grooves, engraved manually in the production of the bridging

matrix, are pressed into the material of the sound band, so that the endless sound band is also provided with uninterrupted sound grooves at the connecting place.

5 The bringing into engagement of the sound grooves at the free ends of the band in its bounded form with the sound ribs of the bridging matrix is difficult and requires much time. In order to facilitate this operation, the endless original sound band is provided, according to the invention, on both sides of the cutting place 4 outside the sound track bundle with marks, which are moulded in the production of the pressing matrix and of the bounded sound band made therefrom as well as in the production of the bridging matrix. The marks may, for example, consist of grains in the wax layer of the original sound band. In Fig. 1 there are indicated on the right of the cutting place 4 three grains 12, and on the left of the cutting place three grains 13. In the original matrix 5 (Fig. 2), these grains are represented by projections 12', 13', and in the sound band produced in series they are again in the shape of hollow grains. On the other hand, the original grains form projections in the bridging matrix, so that it is easy, by inserting these projections in the corresponding grains in the free ends of the sound band, to bring the sound ribs of the bridging matrix into engagement with the sound grooves in the free ends of the sound band, which is thus effected automatically.

HUGO WESTERKAMP.