April 1, 1930. H. WIENER 1,752,357

PHONOGRAPH CONSTRUCTION

Filed Aug. 31, 1928

Fig. 1.

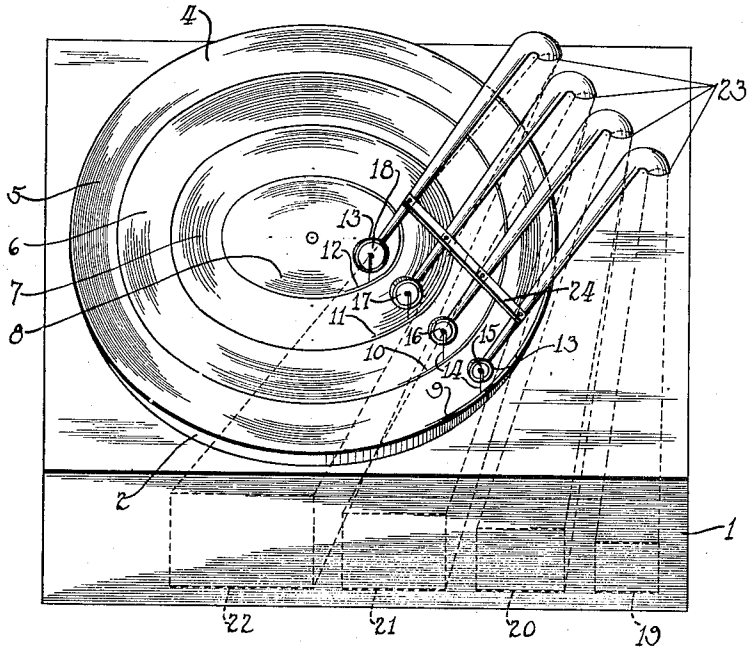


Fig. 2.

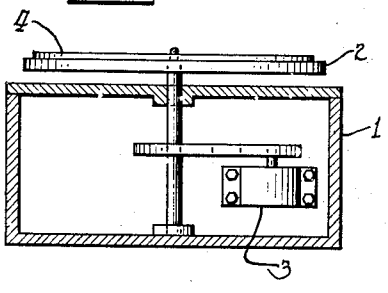
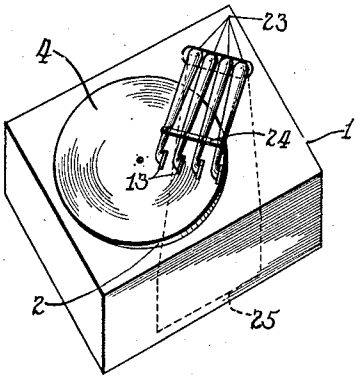


Fig. 3.



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UNITED STATES PATENT OFFICE

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PHONOGRAPH CONSTRUCTION

Application filed August 31, 1928. Serial No. 303,346.

My invention relates to improvements in phonograph constructions, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a phonograph construction which has novel means for reproducing a plurality of tones in unison but from separate sound reproducing units. As for example, a separate sound reproducing unit may be employed for each member of a quartet.

A further object of my invention is to provide a device of the type described by means of which the tones of each recording artist or group of recording artists is reproduced separately and distinctly from the other one or group of artists.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claim.

My invention is illustrated in the accompanying drawings, forming part of this application, in which

Figure 1 is a top plan view of my device,

Figure 2 is a vertical sectional view of my device, and

Figure 3 is a modified form of my device.

In carrying out my invention, I provide a casing 1 having a record retaining member 2 rotatably disposed therein. The record retaining member 2 is operatively connected to any suitable power means, such as a motor 3.

A record 4 is provided and arranged to be disposed upon the retaining member 2. The record 4 is provided with a plurality of groups of tone grooves 5, 6, 7 and 8 spaced upon the record as illustrated in Figure 1. The grooves 5 to 8 inclusive are provided with spaced-apart starting grooves 9, 10, 11 and 12, respectively.

Reproducing units 13 are provided with the usual needles 14 for riding in the tone grooves as the record is rotated. The units 13 may be provided with diaphragms of various sizes. As for instance, if the record should be provided for reproducing a song from a quartet, one of the diaphragms will be relatively small for the first tenor tone, the diaphragms will be slightly larger in size for the second tenor and baritone, and will be relatively large for the bass tone. I have indicated the diaphragms at 15, 16, 17 and 18. These diaphragms vary in size from the relatively small diaphragm 15 to the relatively large diaphragm 18.

Horns 19, 20, 21 and 22 are provided and are in communication with the reproducing units 13 of the diaphragms 15, 16, 17 and 18, respectively. The horns 19 to 22 inclusive also vary in size from the relatively small horn 19 to the relatively large horn 22. The reproducing units may pivot at 23 for allowing the needles 14 to remain in the grooves during the operation of the device.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. It is obvious that this device may be used efficiently for reproducing orchestra, band, or choir music. When the device is used for reproducing a multiplicity of tones, each unit may reproduce a certain group of tones, such as the tones of the stringed instruments in an orchestra, the tones of certain wind instruments, and the tones of certain other wind instruments. However, in following the first illustration, let us assume that the tone grooves 5 to 8 inclusive are for reproducing the voices or tones of a male quartet. The units 13 may be connected together by means of a connecting link 24 so that they may be handled in unison and may operate in unison.

In placing the units in connection with the record, the operator may position the needle 14 of the first or adjacent unit in the groove 9, and the needles of the other units will due to the connecting link 24 be positioned in the grooves 10, 11 and 12. Then by starting rotation of the retainer 2 and the record 4, the tones may be reproduced. The tones when originally recorded upon the record are done separately but at exact starting positions so that when reproduced there will be four separate tones harmonizing together. The sizes of the diaphragms are varied to agree with the fineness or the coarseness of the tones reproduced thereby. In a like man-

ner, the horns 19 to 22 inclusive are varied in size for the same reason.

In Figure 3, I have shown a modified form of my invention which consists in the provision of a single horn 25 which is operatively connected to the reproducing units 13.

I claim:

A device of the type described comprising a record having a plurality of sections of tone grooves, a plurality of reproducing units arranged to be disposed in operative engagement with said tone grooves, means for operatively connecting said units together, whereby they may be actuated in unison, diaphragms disposed in said units, said diaphragms varying in size with respect to each other, and horns communicating with said units, said horns varying in size with respect to each other and with respect to said diaphragms.

Signed at Madisonville in the county of Hopkins and State of Kentucky this 24th day of August A. D. 1928.

HUGO WIENER.