Dec. 8, 1936. W. G. H. FINCH 2,063,870

NEWSPAPER SOUND RECORD SUPPLEMENT

Filed April 22, 1936

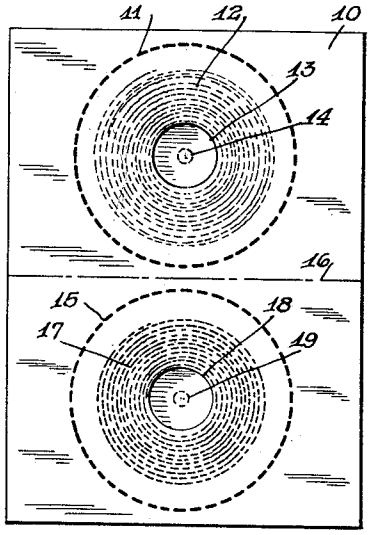


Fig: 1

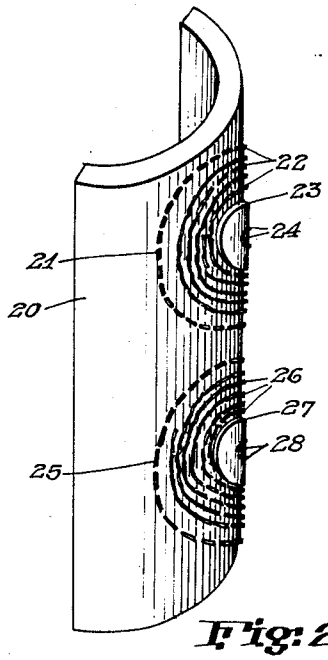


Fig: 2

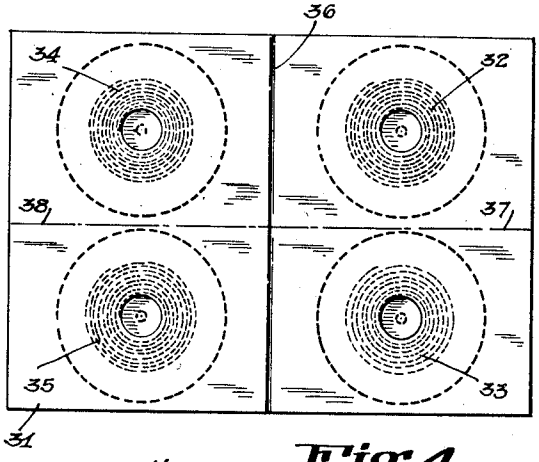


Fig: 4

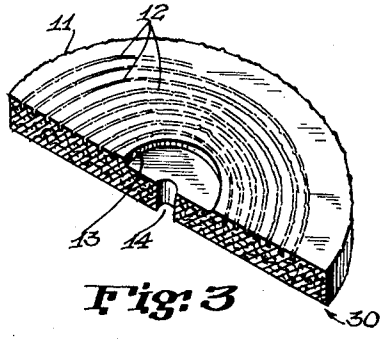


Fig: 3

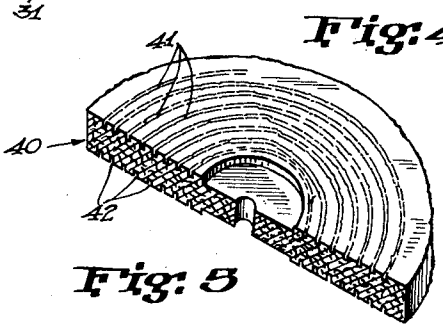


Fig: 5

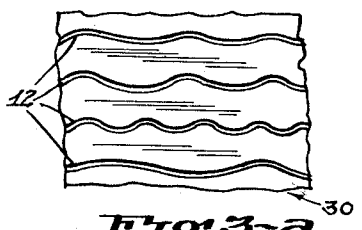


Fig: 3-a

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Patented Dec. 8, 1936 2,063,870

UNITED STATES PATENT OFFICE

2,063,870

NEWSPAPER SOUND RECORD SUPPLEMENT

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Application April 22, 1936, Serial No. 75,851

8 Claims. (Cl. 274—42)

This invention relates to sound records adaptable for newspaper plant production and distribution as an inexpensive supplement for newspapers.

Newspapers generally contain comic strips and sections devoted to children which would be more comprehensible or valuable to the youngsters if means were provided for reading the comic strips or in some way describing the features in the newspaper of interest to them.

It has been proposed to supply a photographic replica of a sound track which may be "played back" as sound with suitable equipment. Black and white impressions of sound may be readily printed on a newspaper sheet in a manner similar to the printing of a photograph. The most important disadvantage of a photographic sound supplement is the relatively expensive and complex equipment required to electrooptically translate the ink-sound record to sound.

In accordance with my present invention, I contemplate a sound record impressed in printer's paper mat or flong of substantial thickness. The sound groove is recorded in a manner similar to the making of disk records having a predetermined spiral track. The sound groove is made with a relatively blunt stylus as compared to high quality recording to facilitate commercial production of the sound sheets and reproduction from the paper mat record. The master negative is formed into a durable metallic platen for directly impressing the sound record into the paper mat. The platen may be flat or semicircular in a manner well known in the printing art.

The outline of the sound record impressed upon the paper mat is preferably depressed to predetermine the cutting line for severing a circular record form from the rectangular sheet. Sound may be reproduced from the paper mat record by using a preferably fibrous or wooden needle or stylus in conjunction with a standard lateral recording unit.

High fidelity reproduction generally denotes a frequency reproduction range of 100 to 7000 cycles. Practical considerations of a sound record supplement for newspapers led me to provide a solution which would sacrifice high quality reproduction and durability of record for merely intelligible reproduction and a record which may only be played several times. The paper mat record supplement in accordance with my present invention is relatively inexpensive, universally adaptable to standard disk phonograph record equipment and discardable after conveying its story to the youngsters.

The recording equipment preferably comprises a standard phonograph having a turn-table rotatable at seventy-eight revolutions per minute. The phonograph may be electric or hand motor driven and may have a mechanical diaphragm-horn reproducer, or an electrical pick-up together with electrical translation as is well known by those skilled in the art.

The reproduction frequency range of the mat records need only be 250 to 2500 cycles for intelligibility of the speech suitable for ready comprehension of the comic strip or any feature of the newspaper which the record may contain. A paper mat sheet record, readily manufactured by the newspaper plant, is an inexpensive supplement of great value to a newspaper edition. Such a record may be played several times, although from a practical standpoint it need only be played once or twice and then be discarded.

The newspaper sound record supplement is particularly suitable for "reading" the comic strips to youngsters or to convey the actual speech intended by each character of the comic strip in the proper sequence for enacting the scenes of the strip. The sound record supplements of my present invention may have advertising matter printed thereon and would form a desirable and profitable advertising section for any newspaper.

It is accordingly an object of my invention to provide a novel newspaper sound supplement formed by impressing a sound record into a paper mat or pulp sheet.

Another object of my invention is to provide a novel newspaper sound record supplement which is inexpensive and adaptable for rapid production in a newspaper plant.

A further object of my invention is to provide a novel newspaper sound record supplement for intelligible reproduction by standard phonographic equipment.

These and other objects of my present invention will become apparent in the following description taken in connection with the drawing, in which:

Figure 1 illustrates a sound record supplement corresponding to a single standard size newspaper sheet containing two sound records.

Figure 2 is a perspective illustration of a semicircular platen for impressing the sound records upon the sheet by a continuous or circular printing press.

Figure 3 is a partial perspective illustration of a sound record cut away from the supplement sheet.

Figure 3a is an enlarged detail illustration of adjacent sound tracks of the record.

Figure 4 is a sound record supplement modification embodying a double sized sheet.

Figure 5 is a partial perspective illustration of a modified form of my present invention utilizing both sides of the record.

A preferred form of my invention is illustrated in Figure 1. A rectangular sheet 10 of size corresponding to a page of the newspaper which it is to supplement has impressed centrally upon the upper and lower sections independent sound records 12 and 17 respectively. The dotted line 16 denotes the bent over zone of the sheet when the newspaper is folded over. Line 16 may be predetermined by suitably impressing or indenting it during the production of the supplement 10.

Supplement sheet 10 is preferably made of printer's paper mat or flong of sufficient thickness and impressionability to have the sound record impressions readily made thereon. The thickness of sheet 10 may for example be $\frac{1}{32}$ of an inch, $\frac{3}{32}$ of an inch, $\frac{1}{8}$ of an inch, or any other suitable thickness sufficient to retain a sound groove or record impression. Sheet 10 should be constructed as inexpensive as is practicable in view of the quality of the resultant records desired. Printer's paper mat is well known in the newspaper printing art. It is essentially of a wood pulp composition having a binder. The paper mat sheet is admirably suitable material for the record of my present invention since it is readily impressionable and suitably retains the recorded impressions. The resultant record is sufficiently durable to maintain the sound tracks after several sound reproductions with a stylus. I shall hereinafter refer to the composition of this material as "printer's paper mat".

The paper mat supplement 10 may be for a standard size newspaper, 23 inches long and 17 inches wide. Two circular record disks 12 and 17 may be impressed upon a sheet 10 of such size, the diameter of the disk being 10½ inches to form a record disk of substantial size. The sound record spiral groove portions 12 and 17 are preferably bounded by circular indentations 11 and 15 respectively to facilitate the separation of the records 12 and 17 from sheet 10 in the intended circular form. Indentations 11 and 15 need not be perforations in the sense that they follow through the thickness of sheet 10 but need only be impressions into the surface of the sheet to permit tearing of the record disks or simple cutting from the sheet 10.

The central area of the records 12 and 17 are preferably bounded by circular outlines 13 and 18 respectively. A printed label of the respective record contents may be made within the central area 13 and 18. The axis of the record disks 12 and 17 are impressed with indentations 14 and 19 respectively to predetermine the proper punching or removing of the central hole from the record to provide a suitable axis of rotation for the record.

The process for manufacturing the sound record supplements of my present invention is particularly adaptable for newspaper plant commercial production. A metallic platen similar to the regular newspaper platen for each newspaper page is formed for the supplemental page 10 in a manner to be described. The platen is preferably made of somewhat stronger metal or alloy than the ordinary ink-printing platen since greater pressure between the plate and the sheet 10 is to be applied in manufacturing the record supplement.

The sound to be reproduced is recorded in a well known manner upon a master positive. The recorded sound may for example form the continuity of speech for characters of a comic strip or series of comic strips or may form the basis of a narrative relating the adventures of the comic characters. It is to be understood that the comic strip or section is supplied as a supplement in the same newspaper edition as the sound supplement 10 thereof. It will be evident that the sound record need not be restricted to the comic strip although its basic utility for youngsters resides therein, but may relate stories or other features of interest to the youngsters. Another important use is to provide a summary of news events to be listened to by blind persons who could utilize sound records without aid. Although I am limiting the description of the sound records to newspaper supplements, the inexpensive paper mat records which are intelligible and usable for several times may also be included in books for children or for the blind as will now be evident.

The master positive record is preferably made with a stylus which is blunt and a pitch which is coarse as compared to the standard molded or composition high quality recordings. The reason for the coarser recording is that the frequency response need not be as great since an upper frequency limit of 2500 cycles is sufficient for intelligibility and the production by platen impression of paper mat sheets will be facilitated by the coarser platen record.

A master negative is formed from the master positive in the well known manner and the negative recording is transferred to a platen similar to a newspaper printing platen.

For production of the sound supplement 10 by machines similar to the present circular printing machines, a semi-circular platen 20 illustrated in Figure 2 is formed for each sheet of the sound supplement. The production of a semi-circular platen is well known in the printing press art and need not be described here in any detail. A mold, preferably a flong mold is formed of the master negative records in this case corresponding to records 12 and 17 to compose the sheet corresponding to platen 20. The flong mold is scorched into a semi-circular form and the metallic platen 20 is poured so that ridges 22 and 26 project from the platen 20 corresponding to their respective master negatives. Spaced projections 21 and 25 forming circular boundaries for the record negatives 22 and 26 are formed on the platen by correspondingly depressing the original mold therefor as will be evident to those skilled in the art. The central projections corresponding to the preformed holes 24 and 28 are similarly made. The central areas 23 and 27 are also preferably raised from the platen 20 by suitable manipulation of the platen mold so as to define the ending of the recording.

For continuous production of the sound record supplements in a manner similar to the continuous production of newspaper sheets the semi-circular platen 20 is mounted in a machine similar to a circular printing press and caused to act upon a continuously fed paper mat sheet which is placed at one end of the machine in the form of a roll. If only single page supplements corresponding to sheet 10 are to be produced, two identical platens 20 are placed on opposite sides of a cylinder of a continuous circular press and caused to act upon a continuous paper mat sheet

fed therethrough. The sound supplement sheets 10 are automatically cut as they are successively produced by the continuously operating press to the form illustrated in Figure 1.

Figure 3 illustrates a perspective view of half of a record disk 30 severed from the supplement sheet 10. The edges 11 which contained indentations or markings to predetermine the circular outline of the disk are shown to be rough between the alternate indentations to indicate that the disk 30 may be readily torn or cut from the sheet 10. The sound record 12 is preferably in the form of a continuous spiral groove having lateral undulations corresponding to the sound to be reproduced. The platen containing the "negative" of the record produces the undulated spiral grooves 12 in the paper mat comprising the record disk 30 as will now be evident. The lateral groove is reproducible into sound by standard phonographic recording equipment. The central hole 14 is shown to be removed so as to form the axis of rotation of the disk 30.

Figure 3*a* is an enlarged partial view of the lateral undulations 12 of the disk 30 corresponding to the sound record. Although I prefer to illustrate my present invention with the widely used laterally cut records, it is to be understood that it is also applicable to the production of hill-and-dale records as sound supplement sheets.

Figure 4 illustrates a modification of my present invention wherein a two page sound supplement is illustrated. Four 10½ inch disks 32, 33, 34 and 35 may be impressed upon a double page corresponding to a standard newspaper size. It is to be understood that if a smaller sized supplement sheet is used correspondingly fewer records or smaller diameter records may be made thereon. A predetermined fold line 36 is impressed upon the double page supplement so as to facilitate proper bending over during assembly of the newspaper edition. Further predetermined bend lines 37 and 38 may be performed across the central portion of the two page supplement so as to predetermine the corresponding bending thereof. It is to be understood that the records 32 to 35 are made in a manner similar to those described hereinabove but that correspondingly independent platens for the opposite sheets of the two page supplement are required.

A further modification of my invention is illustrated in the partial perspective view of Figure 5 wherein the record disk 40 contains record impressions 42 and 44 placed on opposite sides of the disk. These impressions are performed in a manner similar to the printing of opposite sides upon a single sheet in a newspaper printing machine by utilizing corresponding sound record impressions instead of ink-printing platens.

Although I have described my invention as the production of a sound record upon a printer's paper mat sheet, it will be evident that printing matter may also be placed at various positions upon the sound sheet supplement such as for example on the reverse side of a single side sound record sheet and also around the edges or even upon the same area as the sound records are impressed. The printing may be performed subsequent to the record impressions on the paper mat but preferably prior to the impressions.

I have described my invention in connection with a paper mat newspaper supplement of rectangular form. The sound record "sheet" supplement is the preferable form for newspaper work from the point of view of production simplicity and of subsequent utility by "fitting" into the regular paper editions in sheet form. Although a continuous circular press has been described for producing the sound record sheets, a reciprocating flat platen press may also be utilized.

The printer's paper mat sheet is directly impressionable by a platen in contradistinction to moldable materials which are pressed when soft and then need to be baked for hardening. Modifications may be made in my invention which fall within the broader spirit and scope thereof, and I do not intend to be limited except as set forth in the following claims.

I claim:

1. A sound record consisting of a sheet of uncoated printer's paper mat having impressions corresponding to sound waves made therein.

2. A sound record consisting of a sheet of printer's paper mat, said paper mat containing grooves therein having undulations corresponding to sound to be reproduced.

3. A sound record consisting of a sheet of uncoated printer's paper mat of the order of three-thirty seconds of an inch in thickness bearing grooves having undulations corresponding to sound to be reproduced impressed therein.

4. A sound record carrier consisting of a printer's paper mat sheet of rectangular form having impressions corresponding to sound waves forming a sound record therein, said sheet having a series of successive perforations bounding said sound record.

5. A sound record carrier consisting of an uncoated printer's paper mat sheet of rectangular form of the order of three thirty-seconds of an inch in thickness, bearing grooves having undulations corresponding to sound to be reproduced impressed therein, to form a sound record, said sheet having a series of successive perforations bounding said sound record.

6. A sound record carrier consisting of an uncoated printer's paper mat sheet of rectangular form of the order of three thirty-seconds of an inch in thickness, bearing grooves having undulations corresponding to sound to be reproduced impressed therein to form a sound record, said sheet having a series of successive perforations bounding said sound record; said grooves being relatively wide and arranged in a coarse pitched spiral whereby the walls of said grooves are formed in said mat for acting on a blunt stylus for reproducing the sound waves.

7. A sound record carrier consisting of an uncoated printer's paper mat sheet of rectangular form, bearing a plurality of sets of grooves having undulations corresponding to sound to be reproduced impressed therein to form a plurality of sound records, said sheet having a series of successive perforations bounding each of said sound records.

8. A sound record carrier consisting of an uncoated printer's paper mat sheet of rectangular form, bearing a plurality of sets of grooves having undulations corresponding to sound to be reproduced impressed therein to form a plurality of sound records, said sheet having a series of successive perforations bounding each of said sound records; said grooves being relatively wide and arranged in coarse pitched spirals whereby the walls of said grooves are formed in said mat for acting on a blunt stylus for reproducing the sound waves.

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