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MANUFACTURE OF NEWSPAPER SOUND RECORD SUPPLEMENTS

Original Filed April 22, 1936

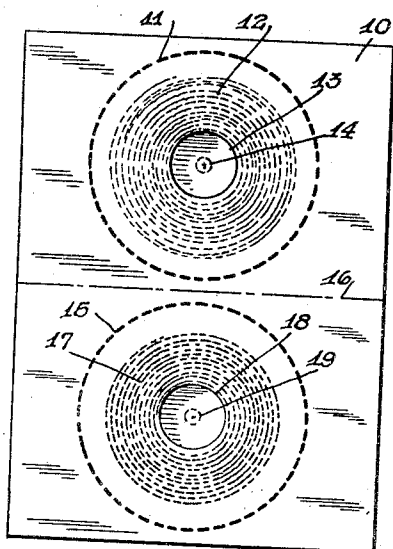


Fig. 1

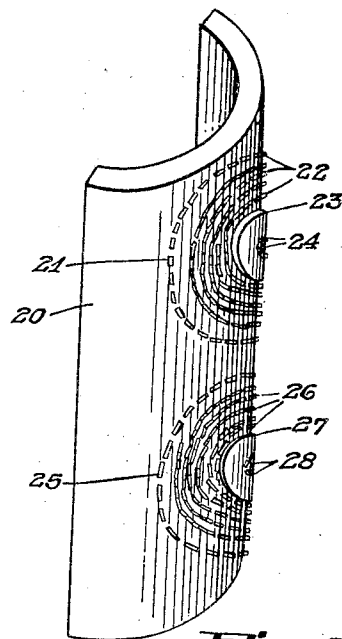


Fig. 2

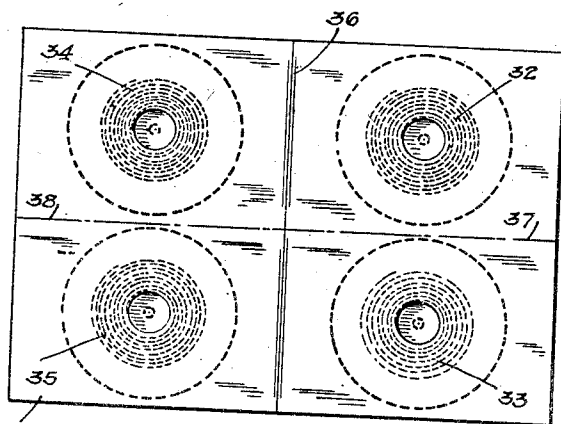


Fig. 4

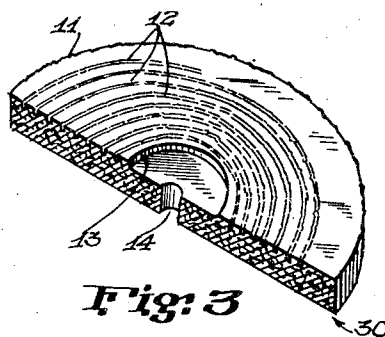


Fig. 3

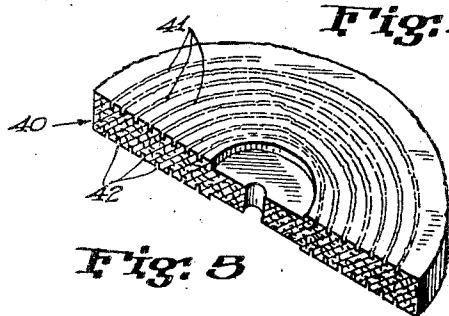


Fig. 5

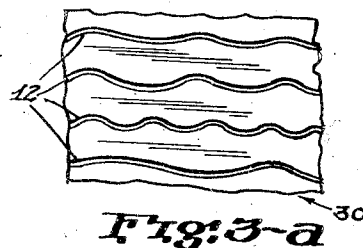


Fig. 3-a

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MANUFACTURE OF NEWSPAPER SOUND
RECORD SUPPLEMENTS

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Original application April 22, 1936, Serial No.
75,851. Divided and this application Novem-
ber 28, 1936, Serial No. 113,182

10 Claims. (Cl. 101—32)

This invention relates to sound records adapt-
able for newspaper plant production and dis-
tribution as an inexpensive supplement for news-
papers, and more particularly relates to novel
5 methods of manufacturing such records.

The present invention is a division of the
parent application Serial No. 75,851, filed April
22, 1936 entitled "Newspaper sound record sup-
plement" which matured into Patent No. 2,063,870
10 on December 8, 1936.

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
15 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
20 printed on a newspaper sheet in a manner sim-
ilar to the printing of a photograph. The most
important disadvantage of a photographic sound
supplement is the relatively expensive and com-
plex equipment required to electro-optically
25 translate the ink-sound record to sound.

In accordance with my present invention, I
contemplate a sound record impressed in print-
er's paper mat or flong, cardboard or other
paper or wood pulp sheet of substantial thick-
30 ness. The sound groove is recorded in a man-
ner similar to the making of disk records having
a predetermined spiral track. The sound groove
is made with a relatively blunt stylus as com-
pared to high quality recording to facilitate
35 commercial production of the sound sheets and
reproduction from the paper mat record. The
master negative is formed into a durable metal-
lic platen for directly impressing the sound rec-
ord into the paper mat. The platen may be flat
40 or semi-circular 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 cir-
cular record form from the rectangular sheet.
Sound may be reproduced from the paper mat
45 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 cy-
cles. Practical considerations of a sound record
supplement for newspapers led me to provide a
50 solution which would sacrifice high quality re-

production 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 pres-
ent invention is relatively inexpensive, univer-
sally adaptable to standard disk phonograph
5 record equipment and discardable after convey-
ing its story to the youngsters.

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

The reproduction frequency range of the mat
records need only be 250 to 2500 cycles for in-
telligibility of the speech suitable for ready com-
prehension of the comic strip or any feature of
20 the newspaper which the record may contain. A
paper mat, cardboard or wood pulp 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
25 several times, although from a practical stand-
point it need only be played once or twice and
then be discarded.

The newspaper sound record supplement is
particularly suitable for "reading" the comic
30 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 supple-
ments of my present invention may have ad-
35 vertising 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 novel methods of manufacturing a news-
paper sound supplement by impressing a sound
40 record into a paper mat or pulp sheet.

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

A further object of my invention is to provide
methods of manufacturing a novel newspaper
sound record supplement for intelligible repro-
50 duction by standard phonographic equipment.

These and other objects of my present inven-
tion will become apparent in the following de-
scription 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 semi-circular 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 $\frac{1}{4}$ 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 method described in the present invention is, however, equally well adapted for other fibrous, cardboard, pulp or impressionable sheet.

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 $10\frac{1}{2}$ 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 is 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

ord 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 reproduction 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 groove 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 3a is an enlarged partial view of the lateral undulations 12 of the disk 30 corresponding to the sound thereof. 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 refers to fibrous, pulpy, cellular or similar composition sheet which 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. The method of producing a newspaper supplement sound record sheet which consists in forming a master positive grooved record of sounds to be reproduced; making a negative record containing projections corresponding to the grooves of said positive record; forming a curved platen containing a replica of said negative record projections; and rolling the platen upon the supplement sheet to form a grooved impression thereon corresponding to the sounds to be reproduced.

2. The method of producing a newspaper supplement sound record sheet which consists in forming a master positive grooved record of sounds to be reproduced; making a negative record containing projections corresponding to the grooves of said positive record; forming a curved platen containing a replica of said negative record projections; and rolling the platen upon a printer's paper mat sheet to form a grooved impression thereon corresponding to the sounds to be reproduced.

3. The method of producing a newspaper supplement sound record sheet which consists in forming a master positive grooved record of sounds to be reproduced; making a negative record containing projections corresponding to the grooves of said positive record; forming a curved platen containing a replica of said negative record projections; rolling the platen upon a paper mat sheet to form a grooved impression thereon corresponding to the sounds to be reproduced, and impressing a boundary about the impression for predetermining its separation from the sheet.

4. The method of producing a newspaper supplement sound record sheet from paper mat sheeting which consists in forming a master positive grooved record of sounds to be reproduced; making a negative record containing projections corresponding to the grooves of said positive record; forming a semi-circular platen containing a replica of said negative record projections; and continuously rolling and pressing the platen upon a paper mat sheeting to form successive impressions thereon corresponding to the sounds to be reproduced.

5. The method of producing newspaper supplement sound record sheets from a roll of pulp sheeting which comprises forming a semi-circular platen containing a projecting portion on the outer surface corresponding to a negative of the sound record, continuously feeding the sheeting past the platen, rotating the platen and simultaneously pressing it against the moving sheeting to impress successive portions of the sheeting with grooves corresponding to the sound record.

6. The method of producing newspaper supplement sound record sheets from a roll of paper sheeting which comprises forming a semi-circular platen containing a projecting portion on the outer surface corresponding to a negative of the sound record, setting the semi-circular platen in a circular rotary newspaper printing machine, continuously feeding the sheeting past the platen, rotating the platen and simultaneously pressing it against the moving sheeting to impress successive portions of the sheeting with grooves corresponding to the sound record.

7. The method of producing newspaper supplement sound record sheets from a roll of paper mat sheeting which comprises forming a semi-circular platen containing a projecting portion on the outer surface corresponding to a negative of the sound record, continuously feeding the sheeting past the platen, rotating the platen and simultaneously pressing it against the moving sheeting to impress successive portions of the sheeting with grooves corresponding to the sound record, and successively trimming the sheeting into rectangular forms to produce the newspaper supplement sheets.

8. The method of producing newspaper supplement sound record sheets from a roll of pulp sheeting of the order of three thirty-seconds of an inch thick which comprises forming a semi-circular platen containing a projecting portion on the outer surface corresponding to a negative of the sound record, setting the semi-circular platen in a circular rotary newspaper printing machine,

continuously feeding the sheeting past the platen, rotating the platen and simultaneously pressing it against the moving sheeting to impress successive portions of the sheeting with grooves corresponding to the sound record, perforating the outline of the sound record impressions to facilitate removal thereof, and successively trimming the sheeting into rectangular forms to produce the newspaper supplement sheets.

9. The method of producing newspaper supplement sound record sheets from a roll of paper mat sheeting of the order of three thirty-seconds of an inch thick which comprises forming a semi-circular platen containing a projecting portion on the outer surface corresponding to a negative of the sound record, setting the semi-circular platen in a circular rotary newspaper printing machine, continuously feeding the sheeting past the platen, rotating the platen and simultaneously pressing it against the moving sheeting to impress successive portions of the sheeting with grooves corresponding to the sound record, marking the outline of the sound record impressions to facilitate removal thereof, and successively trimming the sheeting into rectangular forms to produce the newspaper supplement sheets containing individual sound records.

10. The method of producing newspaper supplement sound record sheets from a roll of pulp sheeting which comprises forming two semi-circular platens containing projecting portions on the outer surfaces corresponding to negatives of the sound records, setting the semi-circular platens in opposed relation on a circular rotary newspaper printing machine, continuously feeding the sheeting past the platens, rotating the platens and simultaneously pressing them against the moving sheeting to impress successive portions of the sheeting with grooves corresponding to the sound records, and successively trimming the sheeting into rectangular forms to produce the newspaper supplement sheets.

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