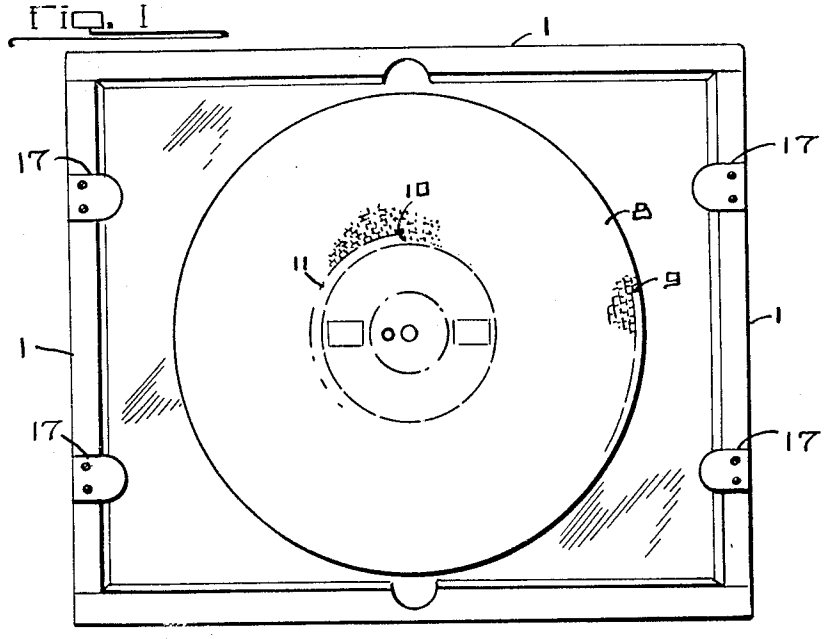
Aug. 26, 1924. 1,506,361

F. J. BULASK

DISK PRINTING

Filed July 14, 1920

Fig. 1



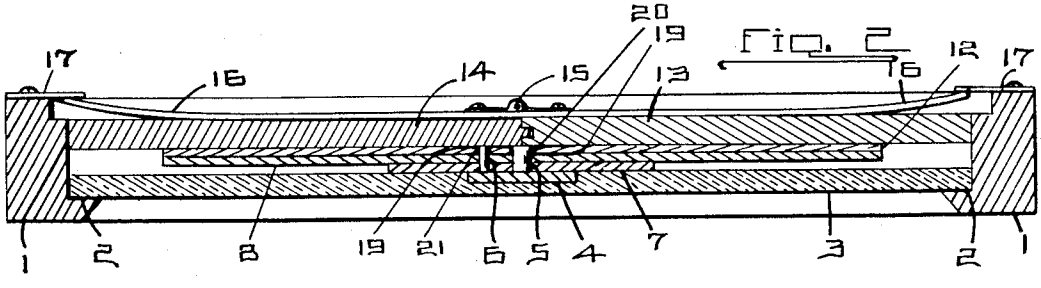


Fig. 2

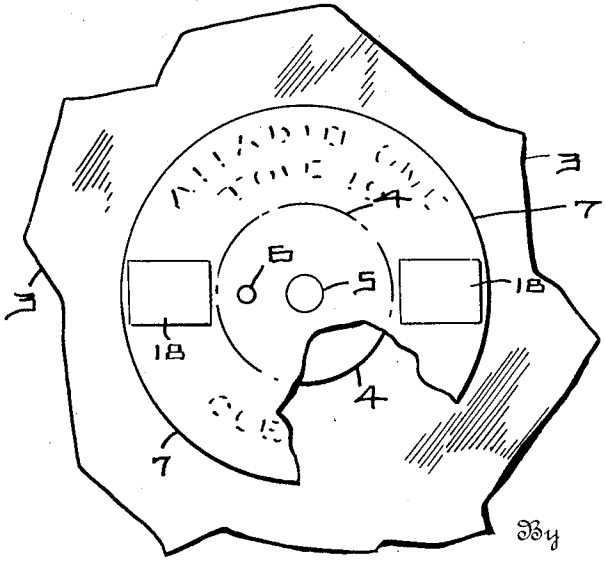


Fig. 3

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Patented Aug. 26, 1924. 1,506,361

UNITED STATES PATENT OFFICE.

FRANCIS J. BULASK, OF TOLEDO, OHIO, ASSIGNOR TO THE PICTURES DEVELOPMENT CO., OF TOLEDO, OHIO, A CORPORATION OF OHIO.

DISK PRINTING.

Application filed July 14, 1920. Serial No. 396,046.

To all whom it may concern:

Be it known that I, FRANCIS J. BULASK, a citizen of the United States of America, residing at Toledo, Lucas County, Ohio, have invented new and useful Disk Printing, of which the following is a specification.

This invention relates to printing multiple view records.

This invention has utility when incorporated for printing motion picture disk records for definite register as to angular starting, and for providing identification data.

Referring to the drawings:

Fig. 1 is a plan view of a printing apparatus embodying features of the invention, the holder being removed and sensitive sheet not in position;

Fig. 2 is a section through the apparatus of Fig. 1, fully assembled, with sensitive sheet therein for printing; and

Fig. 3 is a fragmentary detail of the transparent base with centering and angular guides and identification data carrying transparency.

A printing frame 1 is shown as having inwardly extending ledge 2 for carrying transparent base or glass 3, having let thereinto centrally thereof a member 4 coming flush with the upper or inner face of the glass 3. Rising from this member 4 is a centering guide or pin 5, while eccentric thereof is an angular positioning guide or pin 6. Holes in data carrying transparency 7 may register such transparency not only centrally, but angularly in fixed position on the base 3.

In practice the data carring transparency is a quite thin element which may be complete as to title, film number, or even extend into a brief synopsis of the series of motion picture views, although primarily the element shows manufacturer or dealer and such information as will assist in ready handling of the records.

As a further transparency, there is provided such negative 8 as may be desired to be used in the multiplication of copies thereof. In disk record type of motion picture records, such negative 8 may have a spiral series of views commencing at point 9 and extending inward to terminate at point 10, leaving a central blank transparent region 11 not encroaching upon the extent of the identification data transparency 7 disposed therebelow. This transparency has holes therethrough registering with the pins 5, 6, to bring the starting point 9 in a definite position for use in the projecting machine.

The transparencies as now described are fully assembled, and the pins 5, 6, still project slightly upward therebeyond, so in placing a light sensitive sheet 12 thereon with similar holes as to the holes in the negative 8, there is centering and angular position fixing identical with the negative 8. As thus assembled in the dark, holder members 13, 14, pivotally connected by hinge 15, may be placed in backing position and yieldably maintain the sensitive sheet 12 against the transparencies, by the action of spring straps 16 coacting with clips 17 on the frame 1. The apparatus is now in condition for light exposure in bringing about simultaneous printing upon the sensitive sheet 12 of the views of the negative 8 as well as the identification data of the second transparency 7, all in centered and fixed angular position as to the view starting point 9. Accordingly in the development of the sheet 12 into a disk record its starting point will register with the starting point for the projection apparatus as determined by pins corresponding to the centering pin 5, and angular position fixing pin 6 of the printing apparatus. The sensitived side of the sheet 12 should be toward the transparencies for having the record view series in the proper direction of spiral sequence.

The identification data carrier transparency 7, for specific matter, may have opaque portion or portions 18, which in printing clear on the positive 12, provide space for dating, supplemental description, file numbers, etc., as may be convenient.

Reinforcement at the driving region of the positive 12, may be cared for by a disk 19 on one side, or both sides, in the central portion, and this supplemented by eyelets 20 for the centering pin and 21 for the angular positioning pin, which eyelets 20, 21, may in some disk sizes be sufficient without the disk or disks 19.

What is claimed and it is desired to secure by Letters Patent is:

1. A printing apparatus including a transparent base, a centering pin rising therefrom, an angular position determining guide pin also rising therefrom, said pins providing means for assembly of a positive transparency and a light sensitive means thereon, and a holder for yieldably applying

pressure to hold the pin assembled transparency and sensitive means firmly against the base for light ray printing on said sensitive means.

2. A printing apparatus including a transparent base, a member set into said base to come flush therewith, a centering pin and an eccentric pin carried by said member as centering and angular position fixing means for registering disk news during printing, and a holder for opposing said base.

3. A printing apparatus including a transparent base, a member set into said base to come flush therewith, a centering pin and an eccentric pin carried by said member for centering and angularly fixing the position of a positive transparency, said positive having a transparent blank region into which may be registered by said pins an identification data transparency, and a holder for crowding a light sensitive sheet toward said transparencies in register with said pins for simultaneous printing from said transparencies.

In witness whereof I affix my signature.

FRANCIS J. BULASK.