

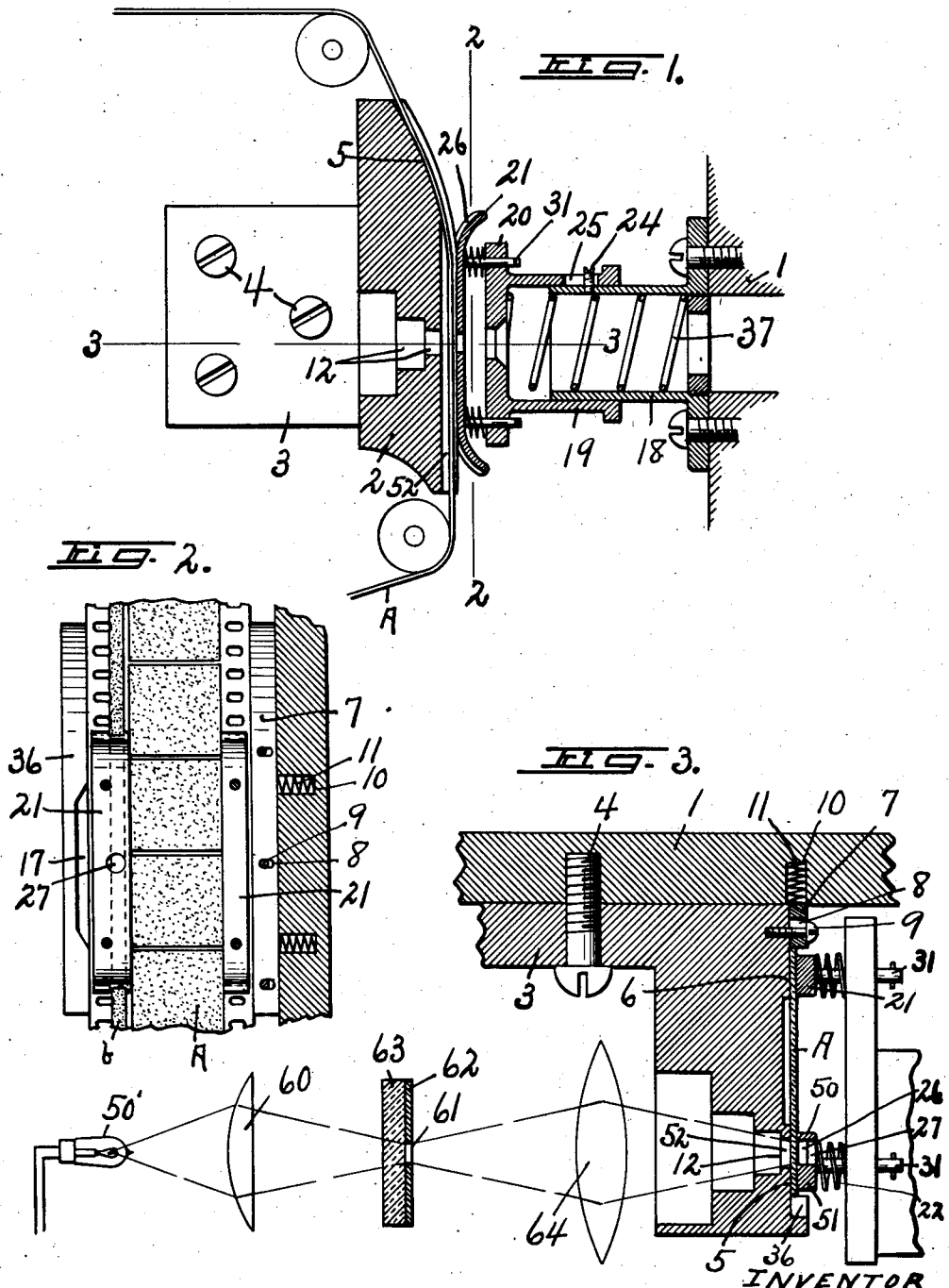
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T. W. CASE

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TALKING PICTURE MACHINE

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WITNESS
H. H. Hurst

INVENTOR
T. W. Case
BY *Duison Sampson*
ATTORNEYS

UNITED STATES PATENT OFFICE

THEODORE WILLARD CASE, OF AUBURN, NEW YORK, ASSIGNOR TO CASE RESEARCH LABORATORY, INC., OF AUBURN, NEW YORK, A CORPORATION OF NEW YORK

TALKING-PICTURE MACHINE

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This invention relates to certain new and useful improvements in talking picture machines.

In the production or reproduction of a film record corresponding to sound waves, it is customary to move the film or record element over a base plate having an opening therein through which opening the record element is subjected to a line of light of desired area, and to maintain the record element in tight contact with the track or base-plate by means of a shoe which overlies that portion of the record element upon which the sound record exists, and it is found that in repeated use of a record element the frictional contact of the element with the members disposed upon opposite sides of it tends to scrape off portions of the record element, and as a result the record deteriorates, and the main object of this invention is to provide an apparatus by means of which an accurate and uniform record can be produced or reproduced without frictional contact of that portion of the element having the sound record thereon with either the track over which it moves, or the shoe or shoes which hold it in tight contact with the track, permitting long use of a record element without deterioration of the sound record.

Other objects and advantages relate to the details of the structure, all as will more fully appear from the following description taken in connection with the accompanying drawings in which:—

Figure 1 is an elevation partially in section of an apparatus of this invention.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1, and in addition illustrating a mechanism for focussing a line of light upon a film moving over an opening in the track or base plate.

The apparatus as here illustrated may comprise a moving picture machine, a portion of which is illustrated at —1— combined in this instance with a replaceable talking picture unit.

The talking picture unit comprises a body section or base-plate —2— including a flange —3—, in this instance extending at substantially right angles to the body and formed

with a plurality of openings for the reception of screws —4—, three being illustrated in this instance, and which are adapted to be threaded into openings in the wall —1— of the moving picture machine. The body-section —2— further includes spaced longitudinally extending tracks —5— and —6—, elevated above the central portion of the body —2— combined with longitudinally extending lateral guides —7— and —36— disposed upon opposite sides of and elevated above the respective tracks —5— and —6— and upon which tracks the film A is adapted to ride between the guides —36— and —7—.

One of these guides, as —7—, is preferably laterally movable with respect to the body —2— so as to tightly engage the adjacent edge of the film A and hold the opposite edge in contact with the guide —36—. For this reason the guide —7— is formed with laterally extending slots —8— adapted to receive screws —9— which extend into openings in the body, and as the strip —7— lies in substantial contact with the wall —1—, this wall is formed with one or more recesses —10— adapted to receive coil springs —11— which bear against the outer edge of the guide —7— and tend to force it inwardly toward the guide —36— so that the film will at all times be tightly confined between the guides.

The track —5— in this illustration is formed with an opening 12 of desired size, and through which opening a portion of the film moving over track —5— may be exposed to a line of light of desired size and intensity. This line of light may be produced in any suitable manner, as for instance by focusing the image of a slit upon the record element, the means illustrated in Figure 3 consisting of a source of light —50—, a lens —60— for focusing the light from said source upon a slit —61— formed in a thin layer —62— of metal or other suitable opaque material preferably deposited upon a transparent plate —63— of glass or the like. The image of the slit —61— may then be focused upon film A by means of lens —64— or any desired lens system.

The guide —36— may, if desired, be cut away at its inner edge so as to form a lateral

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recess —17— which preferably extends some distance upon opposite sides of opening —12— to prevent the accumulation of dirt and foreign matter at the juncture of guide —36— and track —5— adjacent the opening —12—.

Means is provided for holding the record element or film in tight contact with the tracks —5— and —6— respectively, and in this illustration that means takes the form of telescoping tubes —18— and —19—, one of which as —18— is connected at its base by screws or otherwise to the wall —1— of the moving picture machine, and the other section, such as —19— carries at its forward end a plate —20—, which plate in turn carries a plurality of, in this instance two shoes —21—, one for pressing the film into contact with each of the tracks —5— and —6— and the shoe which is adapted to hold the film in contact with the track —5— is formed with a longitudinal groove —26— extending throughout substantially the entire length of the shoe, and of a width equal to and overlying the narrow portion —*b*— of the film which contains the record corresponding to sound wave variations so that the portion —*b*— of the film in passing beneath shoe —21— does not contact with the shoe, but the

flanges —50— and —51— upon opposite sides of the groove or channel —26— bear against the film at the opposite edges of the sound record and hold the film in tight contact with the track —5—.

The flanges —50— and —51— constitute in effect two shoes spaced apart a distance substantially equal to the width of the sound record portion of said element and bearing against the element upon opposite sides of said sound record portion to maintain the record element in flat and uniform contact with the track —5—.

At a point overlying the opening —12— the base of the groove or channel —2— being that portion of the shoe —21— which connects flanges —50— and —51—, is formed with an opening —27— here shown as of circular form, altho the form and size may be varied. The shoes —21— may be separated from the plate —20— by means of pins —31— secured to the shoes and extending through the plate in a slidable manner, springs —22— being mounted on the pins beneath the shoes and the plate so that the shoes are urged by respective springs toward the tracks —5— and —6— to resiliently hold the film in contact with the tracks.

The telescoping tubes —18— and —19— are slidably secured together by means of stud —24— secured to the tube —18— and extending outwardly therefrom and positioned in an elongated slot —25— in the tube —19—.

With this construction the film is held in tight contact with the tracks —5— and —6—

and the longitudinal channel or groove —26— in the shoe —21— permits the passage of the sound record beneath the shoe without frictional or sliding contact of the shoe with the effective portion of the sound record, and the structure so far described except as to the specific means for exposing the film to a line of light of desired size and form is substantially the same as that disclosed in my reissue application Serial No. 223,984 filed October 4, 1927, and the distinct feature of improvement sought to be claimed in this application resides in the provision of means for preventing frictional contact of the sound record with the track —5— while the record element is moving underneath the shoe —21—, and this is effected by forming the track —5— with a groove or channel —52— of substantially the same width as the groove or channel —26— and aligned with it and extending over the opening —12— in the base —2—.

This channel —52— may be of any suitable depth, but should, as stated, be of approximately the width of the sound record so that the shoes or flanges —50— or —51— will hold the record element tightly against the track —5— upon opposite sides of the groove —52—. By this construction the record element is at all times maintained in close and uniform contact with the track —5— and yet neither side of that portion of the record element which contains the sound record is in frictional contact with either the track or the shoe, while the record element is held tightly against the track —5— by the shoe —21— and as a result no portion of the record element is removed by frictional contact with either the track or the shoe, and altho I have shown and described a specific structure as constituting a perhaps preferred form of the invention, I do not desire to restrict myself to the details of the same as various and many changes may be made within the scope of the appended claims.

I claim:

1. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, means for holding the record element in contact with the track and said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record but positioned to one side of that portion of the record element which bears the picture.

2. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, means for holding the record element in contact with the track and

said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record, and an opening through the track leading to said channel to permit the passage of light rays to the record element.

3. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow record thereon, a body portion having a track upon which the film is adapted to ride, said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record but positioned to one side of that portion of the record element which bears the picture, and means for holding the record element in tight contact with the track.

4. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record, an opening through the track leading to said channel to permit the passage of light rays to the record element, and means for holding the record element in tight contact with the track.

5. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record but positioned to one side of that portion of the record element which bears the picture, and said means including two spaced shoes adapted to contact with the record element upon opposite sides of the sound record portion.

6. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record, an opening through the track leading to said channel to permit the passage of light rays to the record element, said means including two spaced shoes adapted to contact with the record element upon opposite sides of the sound record portion.

7. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, said track formed with a

longitudinal channel underlying the portion of the record element which bears the sound record but positioned to one side of that portion of the record element which bears the picture, and means for holding the record element in tight contact with the track, said means including two spaced shoes adapted to contact with the record element upon opposite sides of the sound record portion.

8. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record, an opening through the track leading to said channel to permit the passage of light rays to the record element, means for holding the record element in tight contact with the track, said means including two spaced shoes adapted to contact with the record element upon opposite sides of the sound record portion.

9. In an apparatus for producing or reproducing sound pictures in connection with a record element having or adapted to have a narrow sound record thereon, a body portion having a track upon which the film is adapted to ride, means for holding the record element in contact with the track and said track formed with a longitudinal channel underlying the portion of the record element which bears the sound record but positioned wholly to one side of the portion of the record element bearing the picture, and an opening through the channel portion of the track to permit the passage of light rays to the record element.

In witness whereof I have hereunto set my hand this ninth day of March, 1928.

THEODORE WILLARD CASE.