July 14, 1925. 1,545,659

H. E. IVES

SHEET MOUNTING DEVICE

Filed May 5, 1924

Fig.1

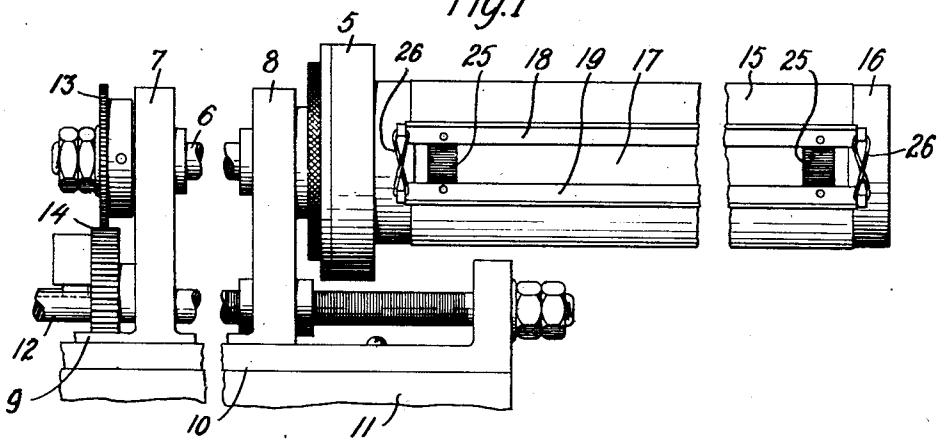


Fig.2

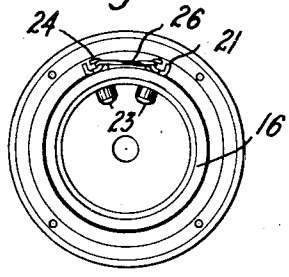


Fig.3

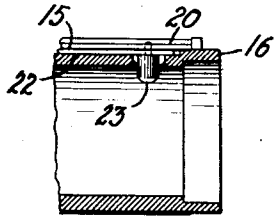
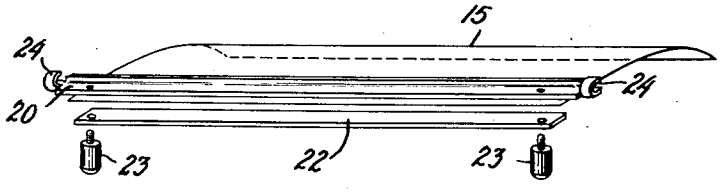


Fig.4



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UNITED STATES PATENT OFFICE.

HERBERT E. IVES, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SHEET-MOUNTING DEVICE.

Application filed May 5, 1924. Serial No. 711,042.

To all whom it may concern:

Be it known that I, HERBERT E. IVES, a citizen of the United States of America, residing at Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Sheet-Mounting Devices, of which the following is a full, clear, concise, and exact description.

This invention relates to sheet holding device and more particularly to means for mounting a sheet of material upon a cylindrical surface in definite relationship thereto.

The necessity often arises of mounting sheets of flexible material upon cylindrical drums. One example of this is found in picture transmission equipment employing revolving picture drums. It is necessary to mount a recording blank upon the reproducing drum during the reproducing process. This requires changing the record blank for each picture. Many arrangements have been employed, the most obvious of which is to paste the edges of the record blank on the reproducing cylinder. This method requires considerable time at best and furthermore, the use of paste or glue is always troublesome. Other schemes have been devised, all of which are more or less unwieldy and objectionable.

An object of the present invention is to simplify the technique of attaching a sheet of flexible material to a cylindrical drum.

In one embodiment of this invention, the opposite edges of a light sensitive record blank or film are held by stiffening members or clamping strips which register with grooves in the reproducing drum of a picture transmission equipment when the film is wrapped around the drum. The film is then held under tension by elastic elements so arranged as to tend to draw the clamps together. The removal and replacement of recording films is thus reduced to a very simple operation.

The novel features which are considered characteristic of this invention are set forth with particularity in the appended claims. The invention, both as to its organization and method of operation together with other objects and advantages thereof, will be further explained in the following detailed description having reference to the accompanying drawing consisting of the following figures.

Fig. 1 is a side view of a picture reproducing drum and film mounting device according to this invention.

Fig. 2 is an end view of the same looking toward the left in Fig. 1.

Fig. 3 is a cross section of a part of the drum with a film mounted thereon.

Fig. 4 is a perspective view of the clamping strips and a fragment of the film before clamping one edge.

Proceeding now to a detailed description of the embodiment of the invention shown in the drawing, a reproducing drum 5 is mounted on a shaft 6 carried on bearing supports 7 and 8. The supports 7 and 8 are integral with a carriage 9 which is slidably mounted on guides 10 which are secured to a frame 11. The shaft 6 is rotated by the rotation of threaded shaft 12 by means of gear wheels 13 and 14. The rotation of shaft 12 at the same time moves the carriage 9 with respect to the frame 11. Gear wheel 14 moves with the carriage 9 and is rotated by a key which travels in a key-way in shaft 12.

Referring now to the reproducing drum 5, a light sensitive record blank or film 15 is mounted on a cylindrical surface 16 which has a longitudinal groove 17 cut therein. The edges of the film are clamped by the clamping strips 18 and 19 which register with the longitudinal groove 17.

Each clamping strip consists of a metallic member 20, one edge 21 of which is upturned to increase its rigidity. A second metallic strip 22 is adapted to be clamped to strip 20 by means of screws 23, 23 which pass through holes in strip 22 and screw into threaded holes in strip 20. These screws are provided with knurled-heads so that they are easily operated by hand. Each end of strip 20 is provided with a bent-up portion 24, 24 in the form of a hook.

The technique of applying a film to the drum 16 consists in clamping one edge of the film with clamping strip 18 and an opposite edge with clamping strip 19, wrapping the film about the drum so that the clamping strips register with the longitudinal groove in the drum 16 with the heads of screws 23, 23 extending toward the center of the drum through slots 25, 25, and applying elastic bands 26, 26 between the hooks of opposing members 20 to tension the film and hold it in desired relationship to the drum surface 16.

If desired, the elastic bands 26, 26 may be

passed completely around the drum surface 16. This method of applying the elastic bands has the added advantage of holding the clamping strips 18 and 19 more tightly against the drum surface for a given amount of tension on the record blank.

The apparatus including the drum is finished in a black color. Preferably the film is backed up with a sheet of black paper. The whole reproducing apparatus is located in a room lighted by red light, which has no effect upon the light sensitive film.

A simple and convenient arrangement is thus provided for holding the film on the drum. The clamps are quickly removable from the drum and from the film and it has been found that a large saving of time is effected by the use of this device.

Modifications of the specific embodiment of the invention, as hereinbefore described, may be made without departing from the scope of the invention as defined in the appended claims:

What is claimed is:

1. A sheet mounting device comprising a mounting surface having a groove therein, means to clamp opposite edges of a sheet to be mounted thereon, and means to maintain said clamping means in said groove.

2. A sheet mounting device comprising a drum having a cylindrical surface and a groove in said surface having edges parallel to the drum axis, a pair of clamping strips for holding opposite edges of a sheet to be mounted, and resilient means to maintain said clamping strips in said groove.

3. A sheet mounting device comprising a mounting surface, means to clamp opposite edges of a sheet to be mounted thereon, means to locate said clamps on said surface in a given position thereon, and means to maintain said clamping means in said position.

4. In a picture transmission system, a picture drum, a picture sheet to be maintained on said drum, a pair of clamping strips for clamping opposite edges of said picture sheet, said drum surface having a groove for said clamping strips, elastic means tending to draw said clamping strips together after said picture sheet has been wrapped around said drum and said strips positioned in said groove.

5. In a picture transmission system, a picture drum having a surface groove parallel to its axis, a picture sheet to be mounted on said drum, a clamp for one edge of said picture sheet consisting of two strips of rigid material adapted to be forced together by screws, a similar clamp for another edge, and elastic bands tending to draw said clamps together after the sheet has been wrapped around said drum and said clamps positioned in said groove.

6. In a picture transmission system, a picture drum having a surface groove parallel to its axis, a picture sheet to be maintained on said drum, a clamp for one edge of said picture sheet consisting of two strips of rigid material adapted to be forced together by hand operated screws, a similar clamp for another edge, and elastic bands tending to draw said clamps together after the sheet has been wrapped around said drum and said clamps positioned in said groove.

7. In a picture transmission system, a picture drum having a surface groove parallel to its axis, a picture sheet to be maintained on said drum, a clamp for one edge of said picture sheet consisting of two strips of rigid material adapted to be forced together by hand operated screws, a similar clamp for another edge, hooks on the ends of one of the rigid members of each of said clamps and elastic bands extending between a hook on one clamp and a hook on the other clamp tending to draw said clamps together after the sheet has been wrapped around said drum and said clamps positioned in said groove.

8. In a picture transmission system, a picture drum having a surface groove parallel to its axis, a picture sheet to be mounted on said drum, a clamp for one edge of said picture sheet consisting of a narrow metallic strip having one edge turned up to increase its rigidity, a second narrow metallic strip and screws tending to force said strips together, a similar clamp for another edge, and elastic bands tending to draw said clamps together after the sheet has been wrapped around said drum and said clamps positioned in said groove.

9. In a picture transmission system, a cylindrical surface, a light sensitive sheet of substantially rectangular cross-section, removable stiffening members secured to opposite edges of said sheet, means on said surface for engaging said stiffening members to accurately position said sheet, and elastic means for holding said stiffening members and said sheet on said surface.

In witness whereof, I hereunto subscribe my name this 29th day of April A. D., 1924.

HERBERT E. IVES.