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SHEET MOUNTING MECHANISM

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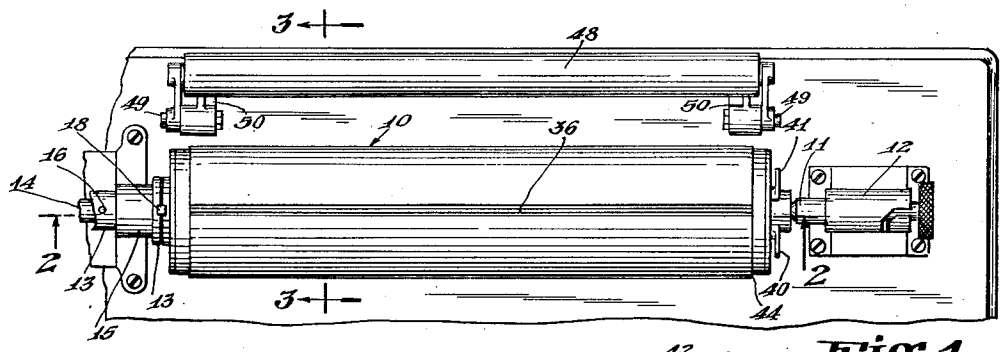


Fig: 1

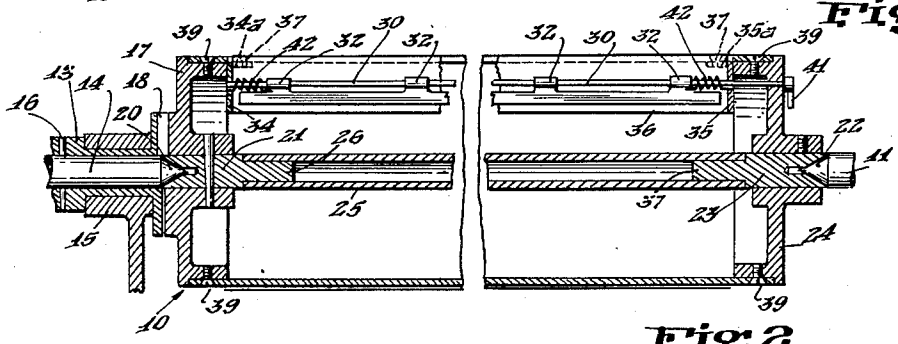


Fig: 2

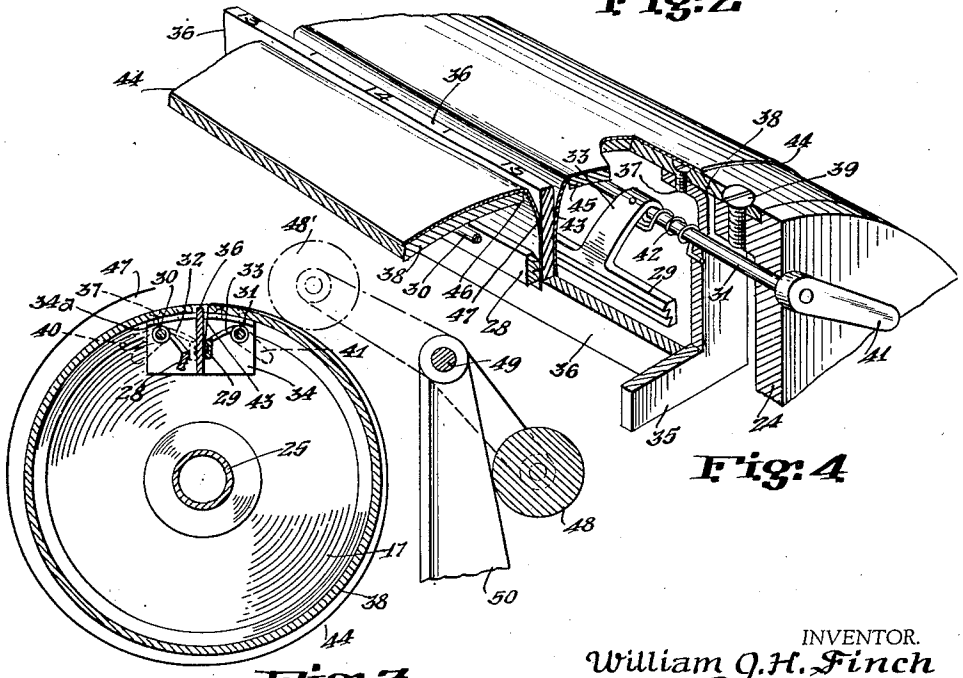


Fig: 4

Fig: 3

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SHEET MOUNTING MECHANISM

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13 Claims. (Cl. 178—13)

This invention relates to sheet mounting mechanism particularly for record sheets to be mounted on the drum of telepicture apparatus.

In telepicture systems employing a long drum with a relatively large diameter, it is desirable to provide means for rapidly, smoothly and firmly mounting a record sheet thereon.

Prior devices generally required record sheets of predetermined length and/or width and were not readily operable. In my co-pending application Serial No. 69,596, filed March 18, 1936, I disclose a sheet mounting mechanism which gripped the record sheet at successive portions and permitting sheets of varying length to be used.

My present invention contemplates a drum provided with sheet gripping members which impart an even and continuous gripping action all along the sheet edges and which have a gripping action to maintain the sheet in position.

Further advantages of my present invention are that the picture sheet is rapidly mountable and demountable and that sheets of any length not exceeding the length of the drum and of any width over a predetermined minimum may be accommodated.

Other objects of my present invention are to provide a sheet mounting mechanism of simple construction and assembly; which is a self-contained unit and is concealed internally within the drum.

In order to more clearly set forth my invention, a particular embodiment is described in the following in connection with the drawing thereof, in which:

Figure 1 is a plan view of the drum portion of the telepicture apparatus.

Figure 2 is a longitudinal cross-sectional view through the drum taken along 2—2 of Figure 1, illustrating the internal sheet mounting mechanism.

Figure 3 is a transverse cross-sectional view taken along 3—3 of Figure 1.

Figure 4 is a fragmentary perspective illustration of the sheet mounting mechanism contained in the picture drum.

Drum 10 is rotatably supported between spindle 11 of tail stock 12 and the driver plate 13 together with spindle 14 rotatably mounted in bearing 15. Motive power is applied to spindle 14 which is pinned to driver plate 13 by pin 16. Driver plate 13 is connected to the end plate 17 of drum 10 by a projection or key 18. The conical end 20 of spindle 14 rotatably supports drum 10 at the metal insert 21; and conical end 22 of spindle 11 rotatably supports the opposite end of drum 10 at the metal insert 23. Insert 21 is pinned to end plate 17 and insert 23 is pinned to the opposite end plate 24. Hollow tube 25 rigidly connects the inserts 21 and 23 at their respective ends 26 and 27. Rotation of driver plate 13 correspondingly rotates drum 10 which is maintained at the proper speed for proper performance of the scanning operations upon the record sheet.

The gripping members are the longitudinally disposed toothed members 28 and 29. Toothed members 28 and 29 are supported on corresponding rods 30 and 31 by brackets 32 and 33, extending from and integral with their respective toothed members. Brackets 32 and 33 are pinned to their respective rods 30 and 31 so as to be rotatable therewith. The rods 30 and 31 are supported by the plates 34 and 35. A longitudinal plate 36 connects with the supporting plates 34 and 35 to form an integral subassembly structure for the whole sheet gripping mechanism including the toothed members 28 and 29. Right angle projections 34a and 35a of corresponding plates 34 and 35 are threaded to accept the mounting screws 37 whereby the plates 34 and 35 are attached to the circumferential drum plate 38. Circumferential plate 38 is in turn attached to the end plates 17 and 24 of drum 10 by screws 39.

The assembly of the gripping mechanism is relatively simple since it is of integral or self-contained construction and is simply attached to the circumferential drum plate 38 which is in turn mounted upon the drum end plates 17 and 24 as will be evident to those skilled in the art. The rods 30 and 31 project through corresponding holes in the end plate 24. Control levers 40 and 41 are attached to the ends of the rods 30 and 31 to control the operation of the gripping members. Springs 42 mechanically bias the gripping members 28 and 29 against the transverse plate 36. As clearly illustrated in Figure 4, one end of the springs 42 is embedded in the end plate 35 and the other end abuts the bracket member 33. Corresponding springs are arranged at corresponding positions in the gripping assembly.

The operation of my present invention is as follows: One end 43 of the record sheet 44 which is to be mounted, is inserted within the space between the plate 36 and the end 45 of the circumferential plate 38. Transverse openings between the ends 45 and 46 of the circumferential plate 38 and the plate 36 which projects therebetween

is provided for the insertion of the corresponding ends 43 and 47 of the record sheet 44. Lever 41 is turned counterclockwise so as to move gripping member 29 away from its normal position against plate 36. The first end 43 of sheet 44 is inserted between gripping member 29 and plate 36. Lever 41 is then released and the spring 42 biasing action presses member 29 toward plate 36 and grips into the end 43 of sheet 44. The presser roller member 48 pivoted at 49 on supporting bracket 50 is then moved over upon drum 10 as shown in its dotted position 48' in Figure 3.

Roller member 48 is sufficiently weighted so as to afford a firm pressure along sheet 44. Drum 10 is manually rotated slowly and film 44 will be smoothly pressed into position upon the surface 38 of drum 10 as will now be evident. The opposite end 47 of sheet 44 is inserted in the space provided between end 46 of circumferential plate 38 and plate 36. Lever 40 schematically illustrated in dotted lines in Figure 3 is turned so as to permit the sheet end 47 to be inserted between gripping member 28 and plate 36. Upon releasing lever 40, gripping member 28 will be mechanically biased against sheet end 47 as illustrated in dotted lines in sectional view Figure 3 and as also illustrated in Figure 4.

The toothed portions of gripping members 28 and 29 are arranged so as to provide a self-gripping action of members 28 and 29 upon the corresponding sheet ends 47 and 43. Any tendency for the sheet ends to be pulled away from the gripping action of members 28 and 29 will be counteracted by the gripping component of the toothed portions of members 28 and 29. Sheet 44 is readily removed from the drum by suitable operation of levers 40 and 41 to release gripping members 28 and 29 respectively.

The gripping action upon the sheet edges is even and continuous along the edges. Sheets of any length along the drum 10 may be mounted. The width of the sheet, which dimension is wrapped around the drum is not necessarily fixed but may be longer than the predetermined minimum since the corresponding ends will project beyond the gripping members 28 and 29 as will be understood.

A scale as illustrated in Figure 3 is marked upon the exposed edge of plate 36 as illustrated in Figure 4. The scale markings are preferably in inches so as to readily apprise the operator of the length of the picture mounted on the drum or of the length of the portion of a picture which has been transmitted.

Although I have described a particular embodiment of my invention, it will be evident to those skilled in the art that modifications are feasible that 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. In a sheet mounting mechanism, a drum; means mounted wholly within the surface of said drum for engaging edges of the sheet, said means comprising a first gripping member and a second gripping member; means for pivotally mounting each of said gripping members; a plate interposed between said members; and means accessible from the exterior of said drum to permit the engagement and disengagement of said sheet.

2. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum.

3. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; and means for supporting said gripping members and said plate within said drum.

4. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; and means for mechanically biasing said gripping members towards said plate.

5. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; and springs for mechanically biasing said gripping members towards said plate.

6. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members towards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum.

7. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members towards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum; and one edge of said plate projecting into a longitudinal slot along the surface of said drum.

8. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members towards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum; one edge of said plate projecting into a longitudinal slot along the surface of said drum; and an accessible lever attached to said projecting rod ends.

9. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members to-

wards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum; one edge of said plate projecting into a longitudinal slot along the surface of said drum; and an accessible lever attached to said projecting rod ends for rocking said gripping members against said biasing means to permit insertion or removal of an edge of the sheet between said plate and the gripping members.

10. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; springs for mechanically biasing said gripping members towards said plate; and a continuous pressure roller engageable with the surface of said drum for smoothing the sheet against the drum as the drum is rotated.

11. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members towards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum; one edge of said plate projecting into a longitudinal slot along the surface of said drum; an accessible lever attached to said projecting rod ends for rocking said gripping members against said biasing means to permit insertion or removal of an edge of the sheet between said plate and the gripping members; and a continuous pressure roller engageable with the surface of said drum for smoothing the sheet against the drum as the drum is rotated.

12. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members towards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum; one edge of said plate projecting into a longitudinal slot along the surface of said drum; an accessible lever attached to said projecting rod ends for rocking said gripping members against said biasing means to permit insertion or removal of an edge of the sheet between said plate and the gripping members; a continuous pressure roller engageable with the surface of said drum for smoothing the sheet against the drum as the drum is rotated; and a scale on the projecting edge of said plate for indicating the scanning length of said sheet.

13. In a sheet mounting mechanism for a telepicture system, a drum; a first gripping member; a second gripping member; a plate interposed between said members; said gripping members and said plate extending longitudinally along said drum; means for supporting said gripping members and said plate within said drum; means for mechanically biasing said gripping members towards said plate; rods for pivotally mounting each of said gripping members; one end of said rods projecting through a side of said drum; one edge of said plate projecting into a longitudinal slot along the surface of said drum; and a scale on the projecting edge of said plate for indicating the scanning length of said sheet.

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