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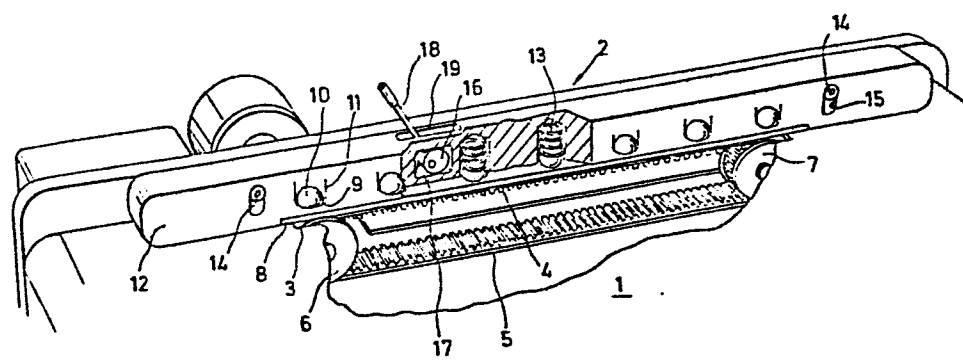
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52 **A transmitter unit of a display system.**

57 A transmitter unit for a display system has a surface (1) for supporting a sheet with a television camera mounted above the surface for viewing prompting information on a sheet disposed on the surface (1). A sheet drive is provided and comprises a belt formed into a closed loop with the external surface of one run (4) of the belt parallel to the surface (1) which supports the sheet. A large number of ball bearings (10) are urged towards the run (4) of the belt and means (16, 18) are provided for moving the ball bearings (10) away from and towards the run (4) of the belt. A drive arrangement is provided for driving the belt.

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"A TRANSMITTER UNIT OF A DISPLAY SYSTEM"

- This invention relates to a transmitter unit of a display system, for example, a closed circuit television prompting system. A transmitter unit of a closed circuit television prompting system is required to transmit
- 5 prompting information on a sheet or strip utilising closed circuit television to one or more prompting devices for viewing by an actor, announcer, etc., it is also desirable that the prompting information viewed by the actor, announcer etc., be readily observable at the transmitter unit.
- 10 It is known to provide a transmitter unit in which prompting information is firstly reproduced on a band or strip and the band or strip is then coiled into a reel. The reel is introduced into the transmitter unit and the tape or strip is unwound and moved past the camera of the
- 15 closed circuit television system, the tape or strip being driven by drive rolls or a take-up spool. It is desirable that the transmitter unit permits variation of the speed of the band or strip so that the supply of prompting information can be speeded up or slowed down as required. For example,
- 20 if the closed circuit television prompting system is used in a television studio, the directions for speeding up or slowing down the supply of prompting information would be given by the director or controller of the television programme.
- 25 In the arrangement described in our Patent No. 1 242 799, the transmitter unit comprises a flat

substantially horizontal surface with driving means for displacing strip material carrying prompting information across the horizontal surface. A television camera is focussed on the prompting information and is connected
5 to a television receiver of the closed circuit television system, this camera being supported above the horizontal surface by a structure which does not prevent the strip material from being displaced across the surface but does not permit direct observation by an observer of the
10 strip material on the surface.

With this arrangement it is possible to effect last minute alterations and there is no need to provide a television receiver at the transmitter unit for monitoring purposes as the prompting information on the strip
15 material is directly visible, although such a television receiver is often provided. However, it is necessary to type the prompting information onto the strip material which is not always convenient.

It is an object of this invention to provide an
20 improved transmitter unit for a display system.

According to this invention, there is provided a transmitter unit for a display system comprising a surface for supporting a sheet, a television camera for viewing prompting information on a sheet disposed on the
25 surface and a sheet driver, said sheet driver comprising a belt formed into a closed loop the external surface of one run of the belt being parallel with the said surface, driving means for driving the belt, a plurality of rollers urged towards the said run of the belt and means for
30 moving the rollers away from and towards the said run of the belt.

In use when the edge of a sheet of material is disposed between the rollers and the said run of the belt the sheet is caused to move in the direction of motion of
35 that run by the force acting on it by the belt while each roller in contact with the sheet rotates. The rollers

have to be moved away from the said run of the belt to insert a sheet between the rollers and the said run of the belt.

Preferably, the surface is horizontal and the rollers
5 are above the said run of the belts, being downwardly urged by gravity.

The rollers may be urged towards the said run of the belt by springs.

The said means for moving the rollers away from and
10 towards the said run of the belt may comprise a cage in which the rollers are disposed and means for moving the cage away from and towards the said run of the belt.

This means for moving the cage may comprise a cam.

The rollers are preferably ball bearings.

15 A transmitter unit for a closed circuit television prompting system in accordance with this invention will now be described, by way of example only, with reference to the accompanying drawing, which is a partial perspective view of the transmitter unit.

20 The transmitter unit has a horizontal platen 1 above which there is supported a downwardly directed television camera (not shown) positioned so that direct observation by an observer of a sheet on the horizontal platen 1 is permitted. The horizontal platen 1 is shown partly broken
25 away in the drawing and there is provided along the edge of the horizontal platen 1, a sheet driver 2. For this purpose a rectangular bight 3 is formed in the edge of the platen 1 and in the bight 3 there is disposed a horizontal run 4 of a drive belt 5 extending between two
30 pulleys 6 and 7; the belt 5 is toothed but may be flat or, alternatively, a V-belt may be used. A horizontal bar 8 extends above the run 4 of the belt 5 and is formed with circular apertures 9 in each of which a ball bearing 10 is located. Each of the ball bearings 10 is movable
35 within a vertical bore 11 in a bar 12 and is urged

downwardly by gravity and a corresponding spring 13 within the bore 11. The plate 8 is secured to the bar 12 so that they form a bearing carrier which can be lifted. For this purpose pins 14 extends horizontally through slots 15 in the bar 12 and a cam 15 in the form of an
5 eccentrically mounted cylinder extends horizontally through another slot 17 in the bar 12. A drive release handle 18 is secured to the cam 16 and extends out of the bar 12 through a longitudinally extending slot 19. The pulley 6 is coupled to a motor 20 whereas the pulley 7 is
10 an idler pulley.

In use, when a sheet of material carrying prompting information has its edge disposed between the run 4 of the drive belt 5 and the drive release bar 8 when in the position shown, the edge of the sheet is engaged by the
15 ball bearings 10 and also by a run 4 of the drive belt 5. The run 4 of the drive belt 5 is moved horizontally by the motor 20 through the pulley 6 and applies a force to the sheet which causes it to move with the run 4 of the drive belt 5. As the sheet moves horizontally the ball
20 bearings 10 rotate about their centres. To insert a sheet between the run 4 and the drive release bar 8, the drive release handle 18 is rotated so that it extends to the right and this action lifts the bearing carrier because the cam 16 pushes upwardly on the upper surface
25 of the slot 17. In this position of the drive release handle, a sheet may be readily inserted between the bearings 10 and the run 4 of the belt 5. When the drive release handle 18 is moved back to its original position,
30 the bearing carrier is moved downwardly. The ball bearings 10 then engage the upper surface of the edge of the sheet at forces set by the springs 13. When the motor 20 is then energized the sheet will be moved horizontally.

Instead of using springs the ball bearings 10 may be
35 urged downwardly by gravity alone.

The sheet driver could be inverted in which case the

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ball bearings 10 would be urged upwardly by their respective springs 11. Further, the platen 1 could be at 45° to the horizontal in which case the provision of springs would be essential.

- 5 The illustrated transmitter unit is also usable as the transmitter unit of a caption roller display system. Such a system is used to display credits and captions which appear at the end of a television programme. The captions and credits appear on the sheet of material
- 10 driven across the platen 1.

CLAIMS

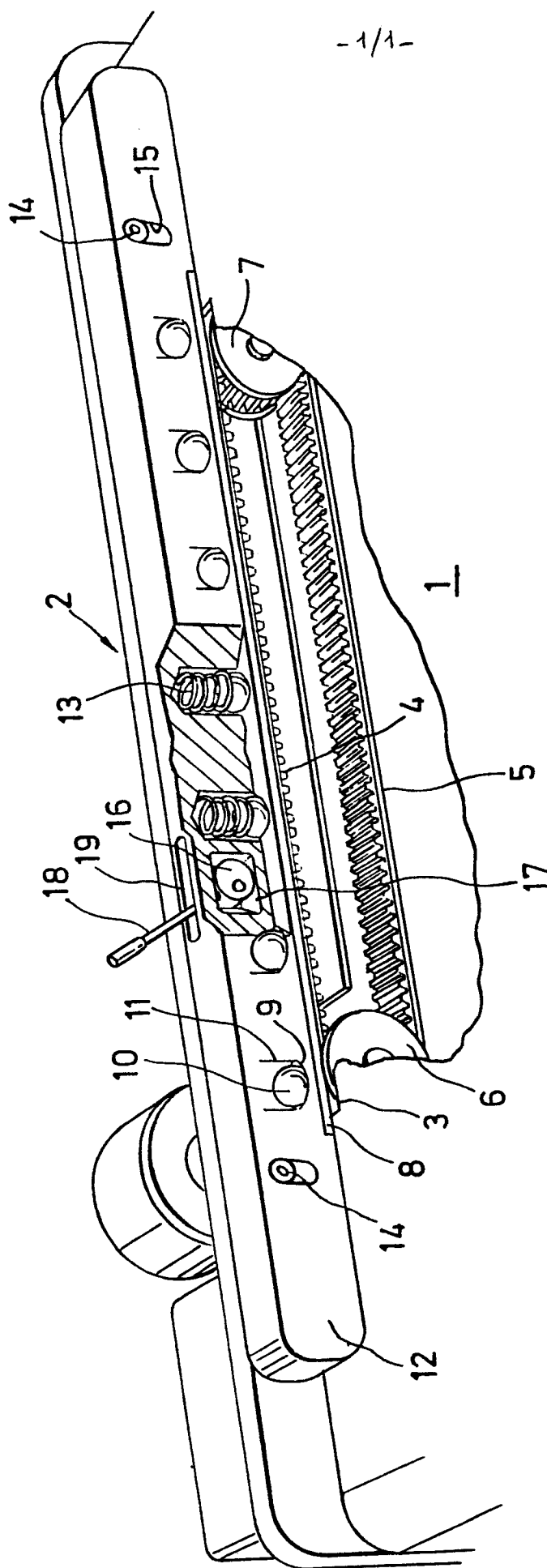
1. A transmitter unit for a display system comprising a surface for supporting a sheet, a television camera for viewing prompting information on a sheet disposed on the surface and a sheet driver, characterised in that the
5 sheet driver comprises a belt (5) formed into a closed loop the external surface of one run (4) of the belt (5) being parallel with the said surface, driving means (6, 7) for driving the belt (5), a plurality of rollers (10) urged towards the run (4) of the belt (5) and means for
10 moving the rollers (10) away from and towards the run (4) of the belt (5).
2. A transmitter unit according to claim 1, characterised in that the surface is horizontal and the rollers (10) are above the run (4) of the belt (5), being down-
15 wardly urged by gravity.
3. A transmitter unit according to claim 1 or claim 2, characterised in that the rollers (10) are urged towards the run (4) of the belt (5) by springs (13).
4. A transmitter unit according to any of claims 1 to
20 3, characterised in that the said means for moving the rollers (10) away from and towards the run (4) of the belt (5) comprises a cage (12) in which the rollers (10) are disposed and means for moving the cage (12) away from and towards the run (4) of the belt (5).
- 25 5. A transmitter unit according to claim 4, characterised in that the means for moving the cage (12) comprise a cam (16).
6. A transmitter unit according to any of claims 1 to 5, wherein the rollers are ball bearings (10).

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**AMENDED
CLAIMS**

1. A transmitter unit for a display system comprising a surface for supporting a sheet, a television camera for viewing prompting information on a sheet disposed on the surface and a sheet driver, characterised in that the sheet driver comprises a belt (5) which is narrow in relation to the sheet and is formed into a closed loop the external surface of one run (4) of the belt (5) being parallel with the said surface, driving means (6,7) for driving the belt (5), a plurality of ball bearings (10) urged towards the run (4) of the belt (5), a cage (12) in which the ball bearings (10) are disposed, means for moving the cage (12) away from and towards the run (4) of the belt (5), and a guide (21) extending parallel and adjacent to the run (4) of the belt (5).
2. A transmitter unit according to claim 1, characterised in that the surface is horizontal and the ball bearings (10) are above the run (4) of the belt (5), being downwardly urged by gravity.
3. A transmitter unit according to claim 1, characterised in that the ball bearings (10) are urged towards the run (4) of the belt (5) by springs (13).
4. A transmitter unit according to any of claims 1 to 3, characterised in that the means for moving the cage (12) comprise a cam (16).

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European Patent
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EUROPEAN SEARCH REPORT

Application number

EP 78 30 0016

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<u>US - A - 3 824 339 (EISENBERG)</u> * Column 2, line 59 to column 3, line 5; figures 1-5 * ---	1	B 65 H 5/02// H 04 N 5/24
	<u>US - A - 3 218 064 (FAIRCHILD)</u> * Column 2, line 28 to column 4, line 16; figures * ---	1,2,4-6	
	<u>GB - A - 1 472 295 (ON APPLICANTS NAME)</u> ----	1	TECHNICAL FIELDS SEARCHED (Int.Cl. ²) B 65 H G 03 B H 04 N
			CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search The Hague		Date of completion of the search 08-02-1979	Examiner LONCKE