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Gauvain

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[54] **SUPPORTS FOR CANS WITH ROTATION DURING TRANSLATION MOTION AT THE OUTLET FROM TEXTILE MACHINES**

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[51] **Int. Cl.²** **B65H 54/78**

[58] **Field of Search** ..... 19/159 R, 159 A; 242/82, 242/83

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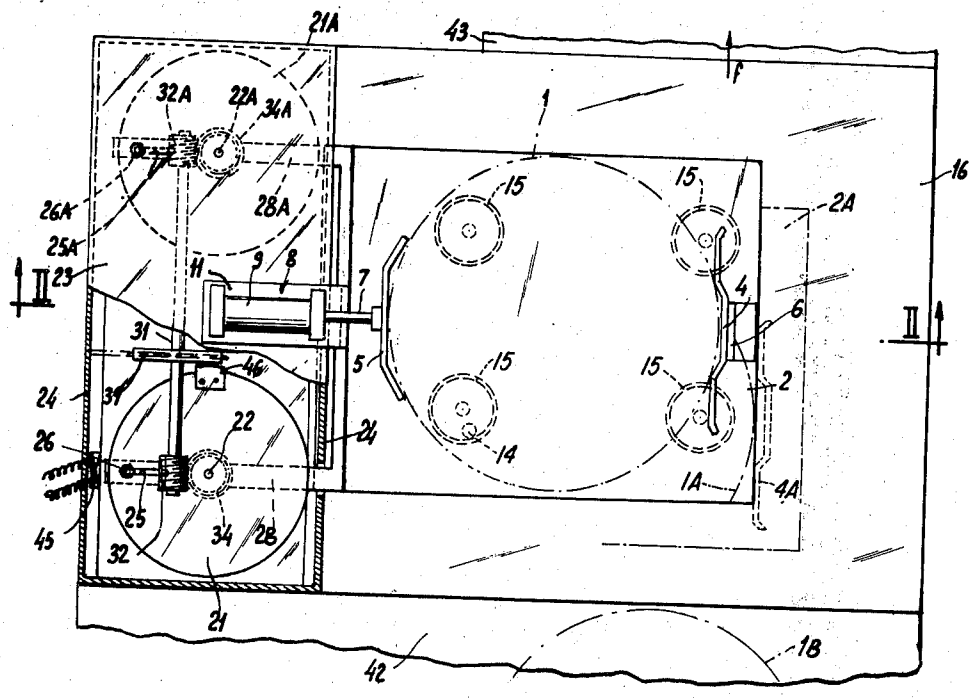
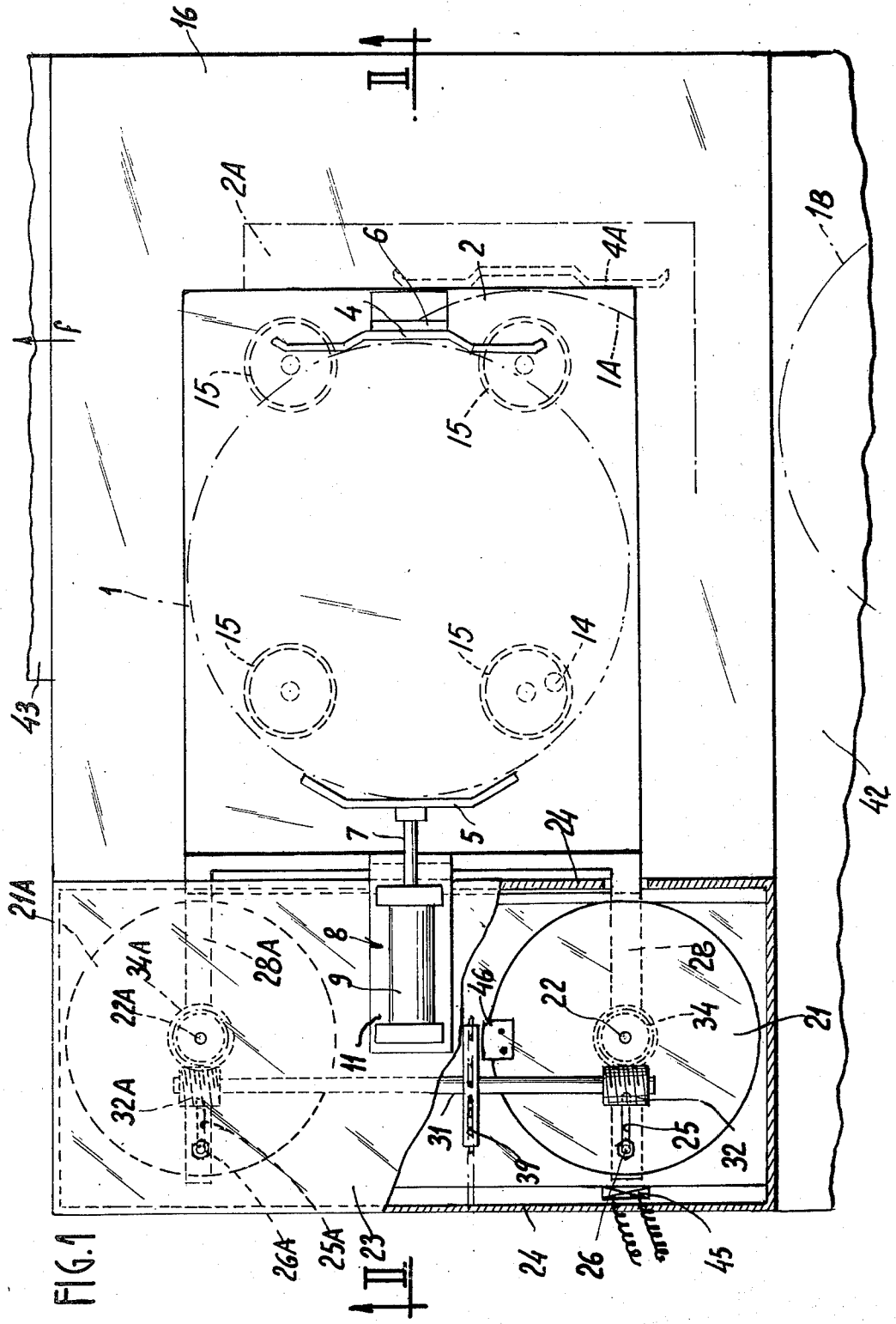
[57] **ABSTRACT**

This invention relates to a can support for circular translation motion at the outlet from a textile machine, comprising a horizontal platform furnished with means for securing a can in place and resting on at least three balls each arranged in a cylindrical bowl fixed to a bed plate which also supports two parallel horizontal cranks connected to a synchronisation transmission and to rotary drive-transmitting means, the ends of said cranks being articulated at two points on said platform. The platform is preferably rectangular and each crank may be adjustable in length. The means for securing a can in place may be constituted by a holder or gripper comprising a fixed join and an opposed movable join preferably subject to the action of a pressurised-fluid jack.

4 Claims, 2 Drawing Figures

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34A
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22A
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26A
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II

FIG. 1

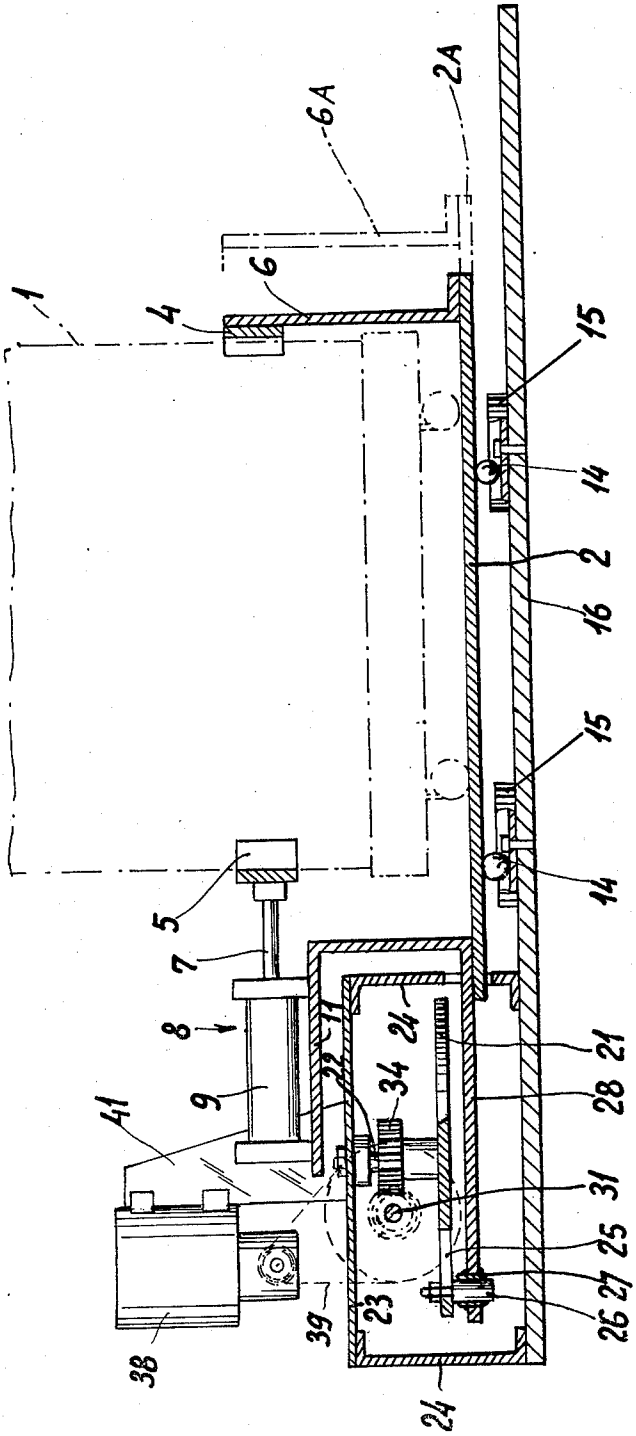
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FIG. 2

SUPPORTS FOR CANS WITH ROTATION DURING TRANSLATION MOTION AT THE OUTLET FROM TEXTILE MACHINES

BACKGROUND OF THE INVENTION

The invention relates to supports for cans with circular translation motion at the outlet from textile machines. A circular translation imparted to the can support is a movement in which each point of the support describes a circle of same radius while the support always keeps parallel with itself.

Such devices make it possible to lay the band of textile fibres or the like in the can, without torsion, in accordance with an appropriate allocation system, for example a coiling system.

The known devices of this type have certain disadvantages. In fact they have, generally, a relatively complicated mechanism with three cogs, a race eccentric in relation to the axis of the control wheel, and a large number of moving parts. The result is that they are costly, that they are of a relatively large size not lending itself to their easy integration into automatic can changing devices, and that the value of their radius of gyration is not adjustable. Moreover it is not easy to incorporate with them a device ensuring stoppage of the movement at a predetermined precise spot favourable to the exchange of cans, and their can-support platform, of circular shape, cannot be adjusted in relation to the base on which the reserve can is arranged.

SUMMARY OF THE INVENTION

The object of the invention is to provide a can support which does not have the aforesaid disadvantages of the known devices.

According to the invention we provide a can support for circular translation motion at the outlet from a textile machine, comprising a horizontal platform furnished with means for securing a can in place and resting on at least three balls each arranged in a cylindrical bowl fixed to a bed plate which also supports two parallel horizontal cranks connected to a synchronisation transmission and to rotary drive-transmitting means, the ends of said cranks being articulated at two points on said platform.

The platform is preferably rectangular. Such a device is extremely simple and of low cost. It is very shallow in bulk, a feature which facilitates its incorporation in an automatic can changing device. Finally, it is possible to utilise cranks of adjustable length, which makes it possible to adjust at will the value of the radius of gyration of the rotary translation motion transmitted to the can.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood on reading the following description and examining the accompanying drawings which show, by way of non-limiting example, one embodiment of a can support according to the invention.

In these drawings,

FIG. 1 is a plan view of the device with sections broken away; and

FIG. 2 is a vertical section substantially along the line II—II of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The support with circular translation motion shown in FIGS. 1 and 2 is intended to support a can 1 arranged at the outlet from a textile machine to receive a band of fibres in accordance with a particular allocation, especially by coiling, effected by a suitable standard means.

The base of the can 1 rests on a horizontal rectangular platform 2 in relation to which it is immobilised by securing means formed, in this example, by a holder or gripper formed by a fixed jaw 4 and a movable jaw 5. The fixed jaw 4 is integral with a support 6 fixed on the platform 2 and the movable jaw 5 is supported by the outer end of the piston rod 7 of a pressurised-fluid jack 8 the cylinder 9 of which is carried by a support 11 also fixed on the platform 2.

The platform 2 rests on at least three balls 14, these balls being four in number in the example, arranged at the four corners of a rectangle and each resting on the bottom of a cylindrical bowl 15 itself fixed to a bed-plate 16.

The platform 2 may be made to move in circular translation motion by means of a mechanical device essentially constituted by two crank disks 21, 21A supported by two vertical shafts 22, 22A suspended from a plate 23 supported above the bed-plate 16 through the intermediary of supports 24. Each of the two crank disks, such as 21, has a radial slot 25 at any point of which it is possible to fix in position a gudgeon pin 26 fitted into a sleeve 27 integral with an arm 28 fixed to the platform 2. The slotted portion of lock disk permits adjustment of circular translation imparted to the platform 2.

The two crank disks 21, 21A are coupled to one another by a synchronisation transmission constituted in the example by a horizontal shaft 31 which supports two worms 32, 32A respectively engaging with two tangential cog wheels 34, 34A which themselves are respectively integral with the two crank disks 21, 21A. The shaft 31 is rotated through the intermediary of a chain transmission 39 from an electrical reduction-gear motor 38 fixed on a support 41 mounted on the plate 23.

On an auxiliary platform 42 which is on a level with the platform 2 there may be placed an empty reserve can 1B. The full can 1 may be withdrawn on to a discharge platform 43 also located at the level of the panel 2.

Changing of cans is effected when the platform 2 occupies the position shown by the dot-dash lines at 2A at which time the can 1A supported by the panel is located exactly opposite the reserve can 1B. This situation is brought about because of a positioning system which comprises a fixed magnetic catcher 45 located in the vicinity of the path of travel of a stud 46 ferromagnetic metal fixed to the periphery of the crank disk 21. The magnetic catcher 45 is inserted into the circuit controlling the supply to the electrical motor 38.

The operation of the device is as follows:

With the can 1 clasped between the two jaws 4, 5 of the holder or gripper, on the platform 2, and with the electric motor 38 in operation, the two crank disks 21, 21A rotate synchronously and transmit to the two arms 28, 28A, and thus to the can-support platform 2, a circular translation motion the radius of which is equal to

that of the cranks formed by the gudgeons **26, 26A** carried by the two rotary disks **21, 21A**. The balls **14** on which the platform **2** rests roll on the bottoms of their bowls, describing circumferences the radius of which is half the radius of the circular translation motion described by the platform **2** which supports the can **1.**

To replace the can **1** by another reserve pot **1B**, the motor **38** is stopped, and, thanks to the magnetic catcher system **45,** the platform **2** is stopped exactly in the position **2A** for exchange of cans. The movable jaw **5** is released by operating the jack **8** and the can **1A** is withdrawn on to the discharge platform **43** in the direction of the arrow *f*, by moving the reserve can **1B** on to the platform **2.** The movable jaw **5** is then re-tightened and the motor **38** is re-started.

It is possible to adjust at will the radius of gyration of the circular translation motion effected by the cansupport platform **2** by adjusting the radius of the cranks formed by the crank disks **21, 21A** by displacing the gudgeons **26, 26A** along the radial slots **25, 25A** of said crank disks.

Naturally the invention is not limited to the embodiment described and shown, and modifications may be made in the latter according to the applications contemplated, without in so doing departing from the scope of the invention as defined in the claims.

I claim:

1. A can support for circular translation motion at the outlet from a textile machine, comprising a bed plate, a horizontal platform above said bed plate, means mounted on said platform for securing a can in place, at least three cylindrical bowls fixed to said bed plate, a ball arranged in each said bowl, said platform resting on said balls, two parallel horizontal cranks supported on said bed plate with each of said cranks being articulated at two spaced points on said platform for imparting motion to the platform, synchronisation transmission means operatively connecting said two cranks to each other and rotary drive-transmitting means operatively connected to the synchronisation transmission means.

2. A can support as set forth in claim **1,** in which the platform is rectangular.

3. A can support as set forth in claim **2,** further comprising adjustment means for adjustable connecting the cranks to the platform to thereby adjust the circular translation motion of said platform.

4. A can support as set forth in claim **3,** in which the means for securing a can in place are constituted by a holder which is supported on said platform said holder comprising a fixed jaw and an opposed movable jaw.

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