

[54] **DEVICE FOR KINEMATIC CONNECTION**

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[58] Field of Search..... 93/36 R, 1 R; 271/200; 198/88, 90, 93, 95, 100, 203; 64/2 R; 74/190, 230.17 A

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[57] **ABSTRACT**

A device for kinematic connection of a drive shaft of a folder-sticker machine to a drive shaft of a receiver which handles the folded and glued boxes received from the machine comprising a flexible transmission cable connected to the drive shaft of the folder-sticker machine by a clutch arrangement and connected to the drive shaft of the receiver preferably by a speed variator. The kinematic connection enables positioning of the receiver both vertically and angularly with respect to the folder-sticker machine and is preferably provided with a pair of horizontal keeper plates which have the cable disposed therebetween.

8 Claims, 2 Drawing Figures

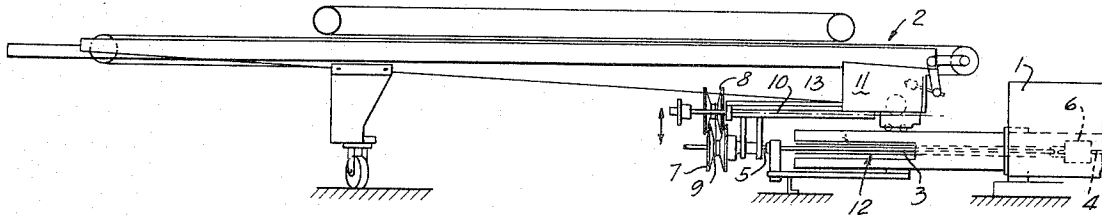


Fig-1

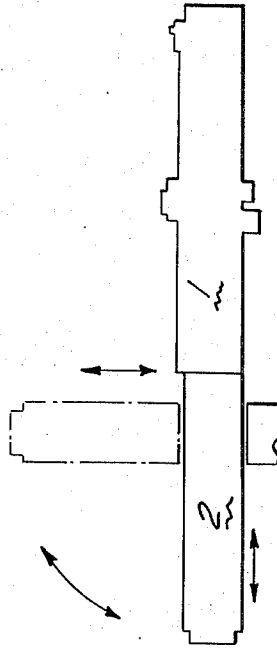
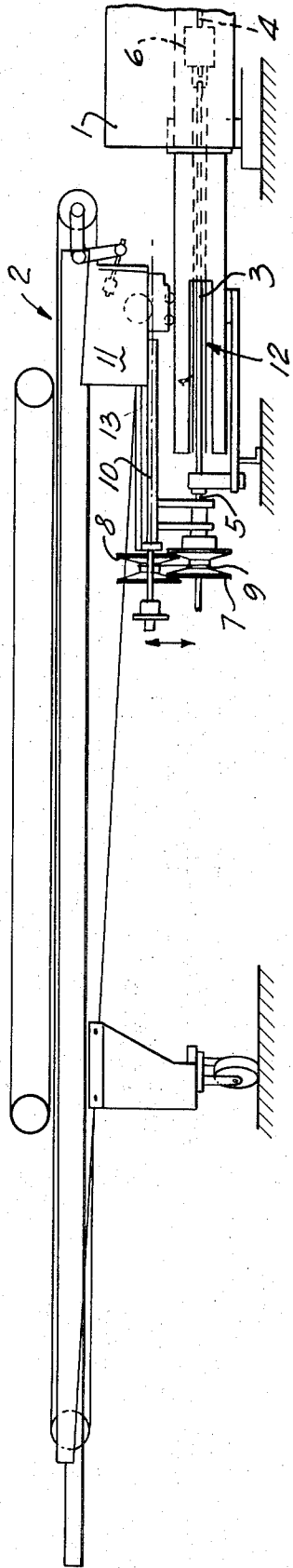


Fig-2

DEVICE FOR KINEMATIC CONNECTION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is directed to a device for the kinematic connection of a folder-sticker machine to its receiver which receives the folded and glued boxes from the machine.

2. Prior Art

Folder-sticker machines, as presently on the market, are provided with a device for kinematic connection of its receiver for the folded and glued boxes of the folder-sticker machine. These devices enable the receiver to be located either in line with the machine or at 90° with respect to the machine so that the path of the boxes leaving the folder-sticker machine can be received under the best conditions depending upon their shape and the type of boxes being manufactured. The present known devices utilize a connection with the main drive shaft of a folder-sticker machine which comprises a secondary connecting drive shaft furnished with a drive pinion which is in driving engagement with a crown wheel for the receiver. The axis of rotation of the crown wheel is arranged on the axis of the swivel of the receiver. These known devices display a major disadvantage. From the single axis of rotation of the swivel, the receiver can only be located in positions defined by this axis.

SUMMARY OF THE INVENTION

The present invention is directed to a device to obtain a special kinematic connection between the drive shafts of the receiver and the folder-sticker machine, which provides a liberty in both lateral and angular positioning of the receiver with respect to the folder-sticker machine. The device of the present invention accomplishes this object by utilizing a flexible transmission cable connected at one end by a first means for connecting the end of the cable to the main drive shaft of the folder-sticker machine, and a second means for connecting the other end of the cable to the drive shaft of the receiver. Preferably, the device further includes a pair of parallel horizontally disposed plates arranged on opposite sides of the cable so that the cable is disposed therebetween. The first connecting means is preferably a clutch device and the second connecting means preferably includes a speed variator.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of a receiver and a folder-sticker machine interconnected by the device of the present invention; and

FIG. 2 is a schematic illustration of various positions for the receiver relative to the folding sticking machine.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The principles of the present invention are particularly useful for providing a kinematic connection between a folder-sticker machine 1 and a receiver generally indicated at 2 which is arranged to receive folded and glued boxes from the machine 1.

The kinematic connection includes a flexible transmission cable 3 having one end connected by a first means such as a clutch 6 to a drive shaft 4 of the machine 1. The other end of the cable 3 is connected by

second means to a drive shaft 10 extending to a speed reducer or reduction device 11 of the receiver 2. The speed reducer 11 utilizes pinions and chains for driving the various conventional conveyors and compressor means of the receiver at different speeds and the arrangement of the reducer 11 with conveyor and compressor means of the receiver 2 is well known and conventional.

The second means comprises a speed variator comprising a pair of pulleys 7 and 8 interconnected by a belt 9. The pulley 7 is driven by a shaft 5 directly connected to the flexible cable 3 and the pulley 8 is connected directly to a drive shaft 10 extending to the speed reducer 11. The pulleys 7 and 8 are conventional split pulleys with one of them being provided with means for adjusting the axial position of the two pulley halves to vary the effective pitch diameter of the pulley and thus provide a variation in the speed reduction or ratio between the two pulleys. While the speed variator is illustrated as a pair of split pulleys with an interconnecting belt, other conventional means for obtaining a speed variation could be utilized.

Preferably, for safety purposes, the flexible transmission shaft is disposed between two horizontal keeper plates 12 and 13 which enable the shaft to be bent to provide the desired angular and vertical position of the receiver relative to the machine 1. As illustrated in FIG. 2, a receiver 2 can assume a variety of positions. As illustrated in in bold lines, the receiver 2 is arranged in line with the machine 1. However, if desired, the receiver 2 may be pivoted or rotated to have an angular position such as 90° relative to the machine 1 as illustrated in broken lines.

In addition to enabling the changing of the angular position of the receiver 2 relative to the machine 1, the kinematic connection of the present invention enables both vertical and horizontal displacement of the receiver 2 relative to the machine 1. Thus, the connection enables positioning the receiver 2 with a lateral offset to the axis of the machine 1, if desired.

Although various minor modifications might be suggested by those versed in the art, it should be understood that I wish to employ within the scope of the patent granted hereon, all such modifications that reasonably and properly come within the scope of my contribution to the art.

I claim:

1. A device for kinematically connecting a drive shaft of a folder-sticker machine to a drive shaft of a receiver arranged to receive the folded and glued boxes therefrom, said device comprising a flexible transmission cable, first means for connecting one end of the cable to the drive shaft of the folder-sticker machine, and second means for connecting the other end of the cable to the drive shaft of the receiver so that the receiver is driven by the folder-sticker machine and can be positioned in selected angular and offset positions relative to the folder-sticker machine.

2. A device according to claim 1, wherein said second means comprises a speed variator.

3. A device according to claim 1, wherein said first means comprises a clutch for connecting the flexible transmission cable to the drive shaft of the folder-sticker machine.

4. A device according to claim 3, wherein the second means comprises a speed variator.

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5. A device according to claim 1, which further includes a pair of horizontally disposed keeper plates, said keeper plates being arranged on opposite sides of the flexible transmission cable so that the cable is disposed therebetween.

6. A device according to claim 5, wherein the second

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means comprises a speed variator.

7. A device according to claim 5, wherein the first means comprises a clutch.

8. A device according to claim 7, wherein the second means comprises a speed variator.

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