

[54] **MACHINE FOR ERECTING AND GLUING
CARTON BLANKS**

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156/578

[51] Int. Cl. **B31b 3/60, B31b 1/62**

[58] Field of Search..... 93/36 MM, 56 PD, 56 R,
93/49 R, 51 R; 53/383; 156/578

[56] **References Cited**

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[57] **ABSTRACT**

The present invention relates to a machine for erecting planar carton blanks to form glued boxes. The machine comprises a shaping die for erecting the blanks and a ram for pressing said blanks against said die, and means having at least one nozzle for applying warm, liquid glue in strings or spots to the portions of the blank to be glued together. The characteristic of the invention is that from the machine frame above the die there is suspended a pivot arm which is pivotally mounted at its upper end on a pin which extends parallel with one of the two main directions of the die, which directions extend perpendicularly to each other. The lower end of the arm supports a glue dispensing nozzle which is connected with a glue container via a conduit and the nozzle is pivotable between two limit positions located in the regions on opposite sides of the die. The length of the arm between the nozzle and the pivot pin of said arm is at least twice the distance between the limit positions of the nozzle, so that during the whole of its movement above a planar blank on the die the nozzle is located at a small distance from the blank sufficient to apply glue.

2 Claims, 4 Drawing Figures

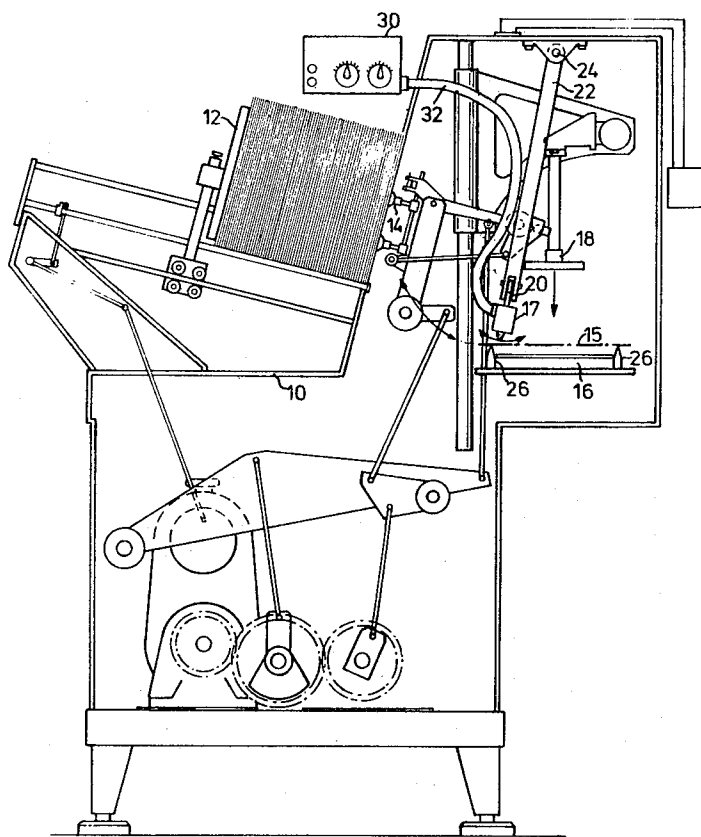


FIG. 1

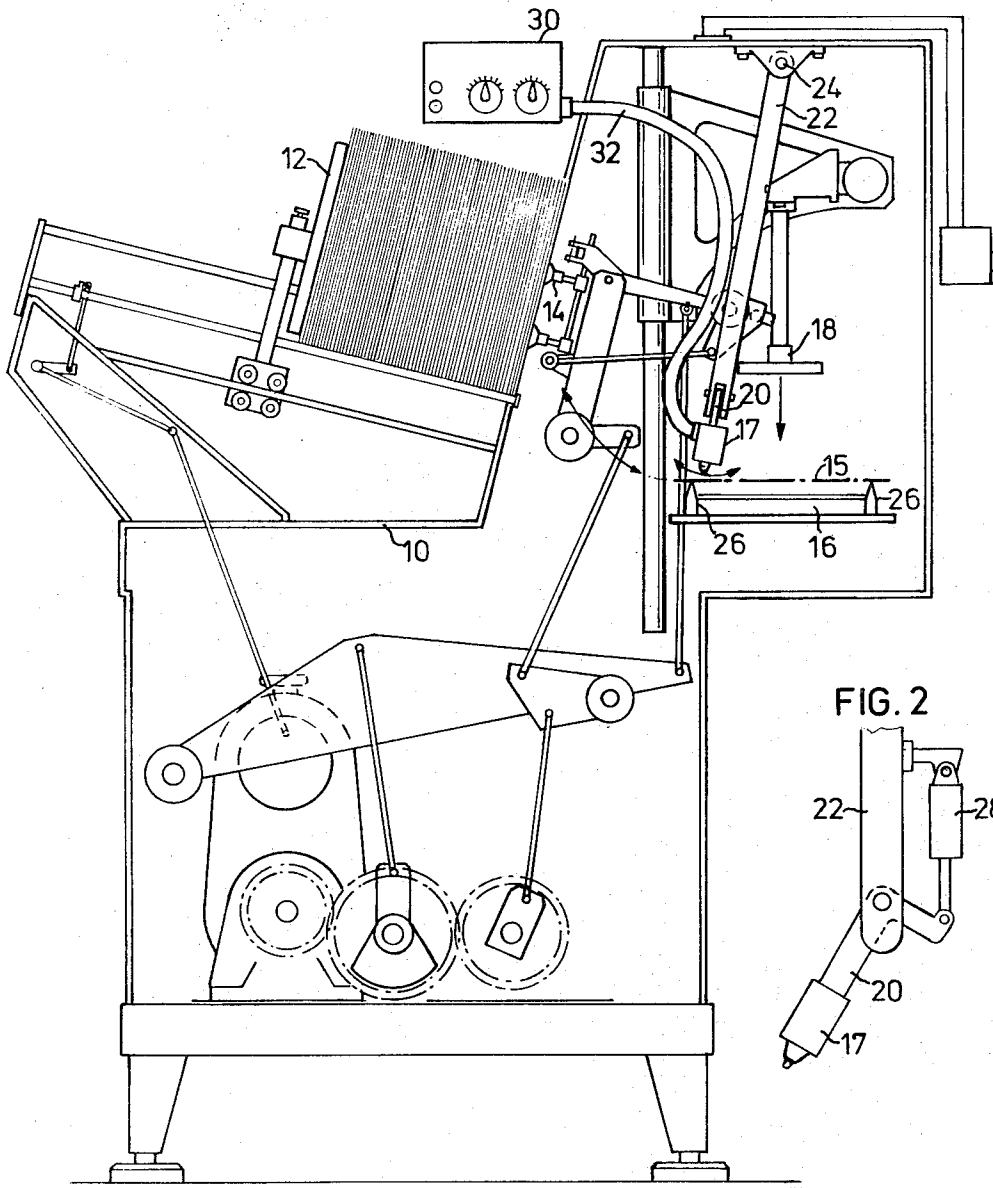


FIG. 2

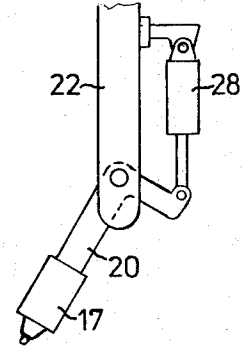


FIG. 3

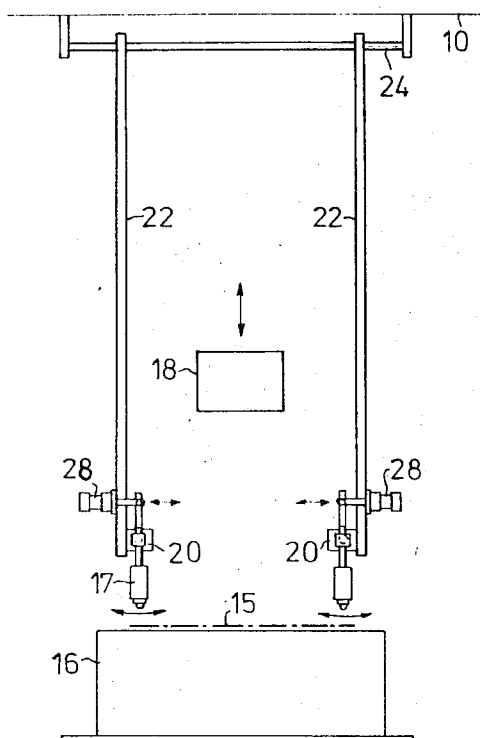
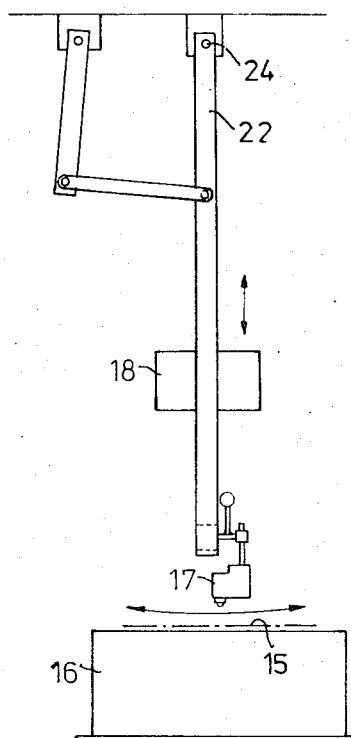


FIG. 4



MACHINE FOR ERECTING AND GLUING CARTON BLANKS

The present invention relates to a machine for erecting a carton blank and gluing together parts thereof to form a box. The machine is provided in a known way with a shaping die to which the planar blanks can be advanced singly from a carton blank magazine. When the carton blank is in position on the die, warm liquid glue is applied to predetermined positions on the blank, either in continuous strings or spotwise. The blank is then urged down against the die by means of a punch, thereby to erect the blank and to glue together parts thereof.

The glue is applied by means of one or more nozzles which are normally carried by a carriage or some other displaceable device arranged on one side of the die. This construction of the glue applying device means that considerable space must be provided adjacent the die. Further, the known glue applying devices are relatively complicated and demand a correspondingly high price. The object of the invention is to provide a glue applying device of simple construction which leaves the space on the sides of the die free. This object is achieved with a machine constructed in accordance with the invention, which is mainly characterized in that in the machine frame above the die there is suspended a pivot arm which is pivotally mounted at its upper end on a pin which extends parallel with one of the two main directions of the die, which directions extend perpendicularly to each other, that the lower end of the arm supports a glue dispensing nozzle which is connected with a glue container via a conduit, that the nozzle is pivotable between two limit positions located in the regions on opposite sides of the die, and that the length of the arm between the nozzle and the pivot pin of said arm is at least twice the distance between the limit positions of the nozzle, so that during the whole of its movement above a planar blank on the die the nozzle is located at a small distance from the blank sufficient to apply glue. Thus, the glue applying nozzle is supported at the lower end of a generally vertical arm which is pivotally mounted at its upper end and the length of which is such as to enable the nozzle to be swung over a planar blank on the die with relatively small variations in height in relation to the blank. Swinging of the arm and the discharge of glue from the nozzle are controlled by means of known operating devices which are synchronized with the means for advancing the blanks to the die.

A preferred embodiment of the invention will now be described by way of example with reference to the accompanying drawings.

FIG. 1 is a diagrammatic vertical section through the machine,

FIG. 2 illustrates the manner in which the nozzle is mounted.

FIG. 3 is a front view of a modified embodiment and

FIG. 4 is a side view.

The illustrative machine has a frame 10 which supports a magazine 12 for carton blanks, which by means of a device provided with suction cups 14 can be transferred singly to a position 15 above a shaping die 16. With the blank in this position, glue is applied thereto

in strings and/or at discrete points by means of one or more nozzles 17, whereafter the blank is pressed down against the die by means of a ram 18, to erect the blank to box form.

The nozzle 17 is mounted to a holder 20, which in turn is adjustably mounted to the lower end of a substantially vertical pivotable arm 22. The arm is pivotally mounted at its upper end to the frame of the machine by a pin 24 which extends parallel with one of the two main directions in which the die extends, said main directions extending at right angles to each other.

The length of arm 22 between the nozzle 17 and the pivot pin 24 is at least twice the distance between the side edges 26 of the die or the maximum length of swing of the nozzle for applying glue to the different glue positions on the carton blank.

As will be seen from FIG. 2, the nozzle holder 20 can be adjusted laterally to different positions relative to the pivot arm, this adjustment being effected by means of a piston 28 or other appropriate operating means. Thus, in this way the path travelled by the nozzle can be readily adjusted laterally. It is also possible to adapt the operating means for the pivot arm and the holder in a manner to cause the holder to execute a lateral movement in one or both directions during movement of the pivot arm between its limit positions, to enable glue to be applied to the blank in accordance with a predetermined pattern.

The heated, liquid glue is applied from a container 30 which is connected to the nozzle via a heated conduit 32. Dispensing of an appropriate quantity of glue and the time at which the glue shall be applied are determined by known means suitable for this purpose.

With the illustrated examples there are used two pivot arms 22, located in lateral spaced apart relationship, for applying glue to two opposing edge portions of the blank.

I claim:

1. A machine for erecting planar carton blanks to form glued boxes comprising a shaping die for erecting the blanks and a ram for pressing said blanks against said die, and means having at least one nozzle for applying warm, liquid glue in strings or spots to the portions of the blank to be glued together, characterized in that from the machine frame above the die there is suspended a pivot arm which is pivotally mounted at its upper end on a pin which extends parallel with one of the two main directions of the die, which directions extend perpendicularly to each other, that the lower end of the arm supports a glue dispensing nozzle which is connected with a glue container via a conduit, that the nozzle is pivotable between two limit positions located in the region on opposite sides of the die, and that the length of the arm between the nozzle and the pivot pin of said arm is at least twice the distance between the limit positions of the nozzle, so that during the whole of its movement above a planar blank on the die the nozzle is located at a small distance from the blank sufficient to apply glue.

2. A machine according to claim 1, characterized in that the nozzle is carried by a holder which is connected with the pivot arm and arranged to enable the nozzle to be adjusted to different lateral positions relative to the pivot arm.

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