Nov. 17, 1964 G. R. MILLARD 3,157,162

TAPE FOLDING ACCESSORY FOR TAPE PRINTING MACHINE

Filed Feb. 14, 1963 2 Sheets-Sheet 1

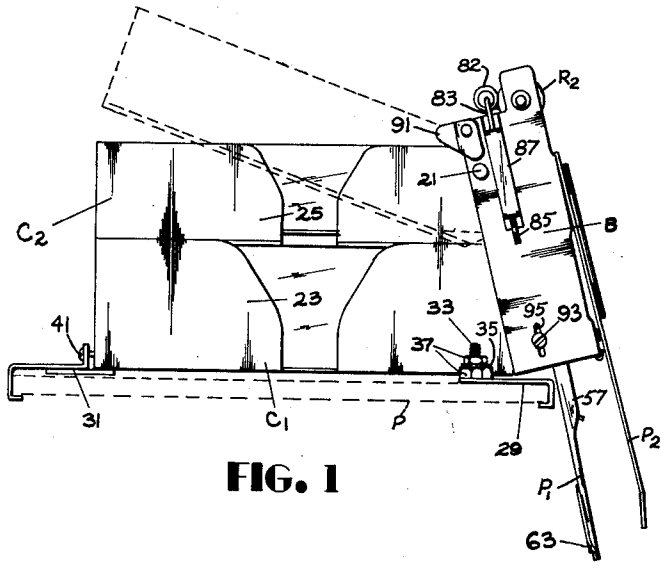


FIG. 1

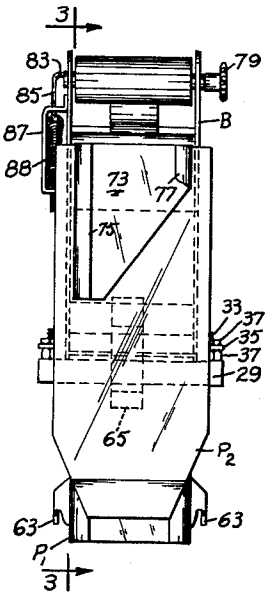


FIG. 2

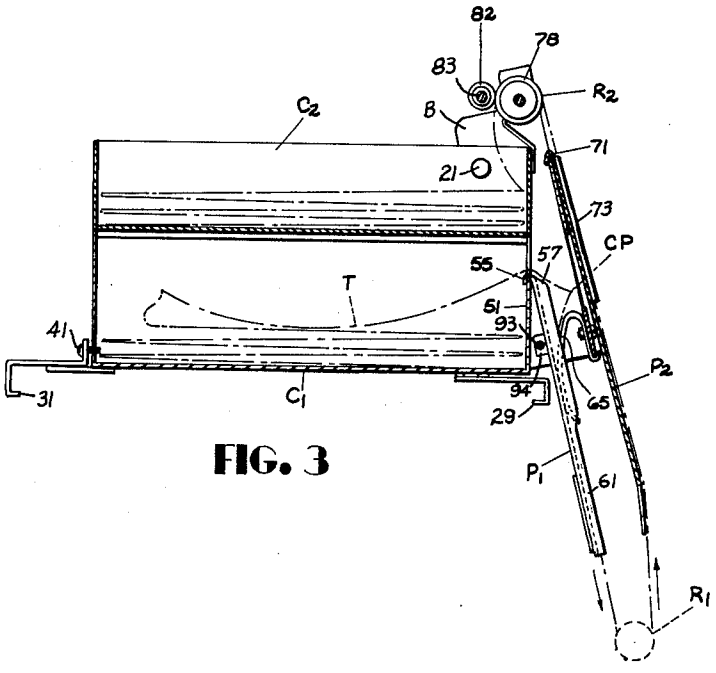


FIG. 3

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TAPE FOLDING ACCESSORY FOR TAPE PRINTING MACHINE

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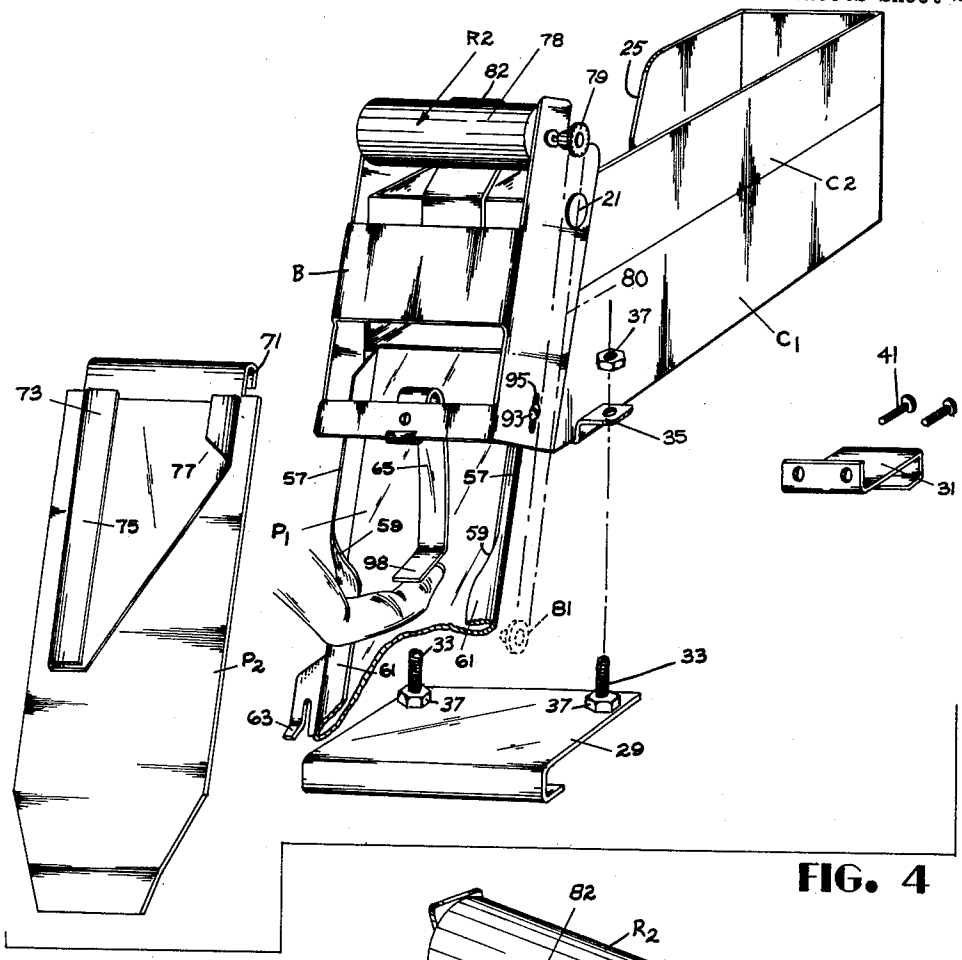


FIG. 4

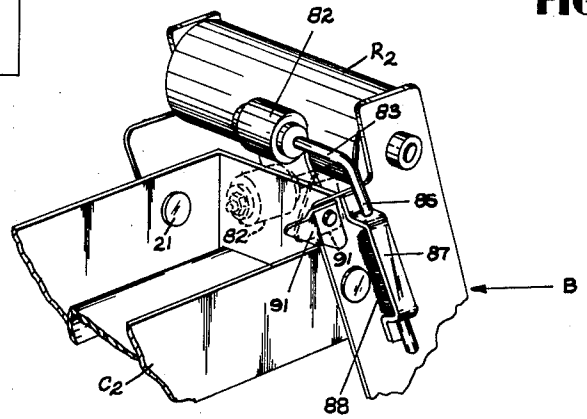


FIG. 5

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# TAPE FOLDING ACCESSORY FOR TAPE PRINTING MACHINE

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2 Claims. (Cl. 120—32)

This invention relates to a tape folding accessory for a printing machine such as, for instance, an IBM No. 1201 Proof Inscriber.

It is a main object of the present invention to provide a tape folding accessory that will properly unfold tape, flatten the creased portions thereof and feed the tape to the printing mechanism of a printing machine, and then lead the tape away from the printing mechanism and thereafter refold the tape.

Various other objects of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein:

FIG. 1 is a side elevational view of a tape folding accessory which embodies the concepts of the present invention;

FIG. 2 is a front elevational view of the accessory shown in FIG. 1;

FIG. 3 is a vertical sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a front right somewhat exploded perspective view of the accessory, showing the spring pressure having been relieved to allow initial feeding through of tape; and

FIG. 5 is a rear upper left perspective view of a portion of the accessory.

Referring to the drawings, the accessory comprises a lower container $C_1$, which is in the form of an elongated, open-top metal box. A generally channel-shaped bracket member B embraces the forward portion of the container $C_1$ in spaced relation to the front wall of the container and is secured to the container in a position extending obliquely relative to the length of the container $C_1$. It is evident that the bracket member projects upwardly beyond the container $C_1$.

An upper container $C_2$ in the form of an elongated, open-top metal box is disposed in superposed relation with respect to the box $C_1$ and is pivotally mounted at **21** to the bracket member B for pivotal movement from the full line position shown in FIG. 1 to the broken line position. The front portion of the container $C_2$ is embraced by the bracket member B. The lower edges of the upper container $C_2$ may be rabbeted to fit within the upper edges of the lower container $C_1$.

The containers $C_1$ and $C_2$ have cut-outs at **23** and **25**, respectively, to provide room for the fingers of the operator when placing a bundle of tape in container $C_1$ or in removing a bundle of tape from the container $C_2$. In removing tape from the container $C_1$, the container $C_2$ will be swung to the broken line position in FIG. 1 to provide proper clearance space.

The accessory is secured to the top panel P of a printing machine by means of a front clamp member **29** and a rear clamp member **31** (FIGS. 1 and 4). The clamp member **29** fits over the front edge of the top panel P and has a pair of upstanding studs **33** projecting upwardly through ears **35** (FIG. 4) fixed on the lower portion of the lower container $C_1$. Nuts **37** on the studs secure the studs to the ears and provide for vertical adjustment of the front end of the accessory relative to the panel P and thus relative to the printing machine.

Th rear clamp **31** embraces the rear edge of the panel P and is secured by screws **41** to the rear of the container $C_1$. It is apparent that the clamp **29** is first arranged in place and thereafter the clamp **31** is applied to the associated edge of the panel P and the screws **41** tightened so



that the clamp members **29** and **31** firmly embrace the panel P.

The container $C_1$ has a front wall **51** (FIG. 3) which is cut down at the upper portion thereof to provide an outlet for prefolded tape T, a supply of which is shown disposed within the container $C_1$.

Guide means are provided for guiding the tape T, as it leaves the container $C_1$, in a downward direction to a driving roll $R_1$ on the printing machine, and then guiding the tape in an upward direction after leaving roll $R_1$ to a driven roll $R_2$ and then guiding the tape into the container $C_2$.

This guide means includes a rear guide plate $P_1$ having an upper hook **55** to hook over the upper edge of the wall **51**. The rear guide plate $P_1$ has upstanding side flange portions **57** which are best shown in FIG. 4, which are curled inwardly at **59** to provide a pair of opposed channels **61**. The lower end of the guide plate $P_1$ has a pair of forwardly bent tabs **63** which provide a pair of bights to fit on portions of the printing machine.

As the tape is withdrawn from the container $C_1$, the creased portions CP thereof tend to remain creased and if not removed will cause difficulty in proper feeding. The side edges of the tape T as they leave the container $C_1$ are guided by the flange portion **57** and thereafter by the curled portion **59** which tend to cause the creased portions CP to flatten out so that they will ride properly within the channels **61**. However, the curled portions **59** are not able to perform this function consistently and so I have provided a strip spring **65** which is secured to the lower end of the front wall of the bracket B (see FIG. 3) and then extends upwardly and downwardly to engage the tape at a place just in advance of the curled portions **59**. The strip spring **65** and the rear guide plate $P_1$ provide a gradually narrowing upwardly facing mouth to receive the tape T and positively flatten out the creased portions CP thereof so that they readily enter the curled portions **59** and the channels **61**.

Upon leaving the channels **61**, the tape passes around the roll $R_1$ which is a driven roll provided on the printing machine. Thereafter the tape passes upwardly over the front of a front guide plate $P_2$. The front guide plate has a hook **71** (FIG. 3) which hooks over the front wall of the bracket member B. The front guide plate $P_2$ has a channel-providing plate **73** (FIG. 4) attached thereto. The channel-providing plate provides opposed channels **75** and **77** (FIGS. 2 and 4) to guide the tape toward the upper roll $R_2$. The guide plate $P_2$ also provides a support or backing to enable the tape to be marked or written on by the operator when necessary or required.

The roll $R_2$ is rotatably mounted in the upper portion of the bracket member B and has an elastomer covering or sleeve **78** (FIG. 3) for good frictional contact with the tape.

The shaft of the roller $R_2$ is provided with a sprocket **79** (FIG. 4) which is driven by a chain **80** which in turn is driven by a sprocket **81** mounted on the shaft of the driving roller $R_1$.

Bearing against the rear surface of the roller $R_2$ is a tensioning roller **82** (FIGS. 1 and 5) which is rotatably mounted on shaft **83**. The shaft has a downwardly bent portion **85** rotatably passing through the U-shaped bracket **87** which is secured to the bracket member B. A torsion coil spring **88** surrounds the shaft portion **85** within the confines of the U-shaped bracket **87** and is secured at one end to the bracket and at its opposite end to the shaft portion **85** to urge the roller **82** against the roller $R_2$.

A latch **91** (FIG. 5) is provided on the bracket member B. When the latch is in its solid line position as shown in FIG. 5, it is inoperative. When the shaft for the roller **82** is swung to the dotted line position shown in FIG. 5, and the latch is pivoted to its raised position,

it will prevent return of the shaft to its full line position until after the latch is lowered.

A bolt **93** (FIGS. 1 and 4) passes through slots **95** in the bracket member B and through ears **94** (FIG. 3) on the rear of the rear guide plate $P_1$ to dispose the guide plate in a predetermined position relative to the bracket member and the printing machine despite the pressure thereagainst of the spring **65**.

FIG. 4 shows that when plate $P_2$ is removed, ready access is provided to the spring **65** because the spring projects downwardly below the lower end of the bracket member B and has a forwardly bent lower portion **98** to enable the spring to be pulled forwardly in initially feeding the tape T through the rear guide plate $P_1$. After the tape is fed through the guide plate and around the roller $R_1$, the front guide plate $P_2$ will be hooked into place and the tape fed upwardly through the front guide plate over the upper roller $R_2$ and then downwardly between such roller and the tension roller **82**.

Having described the invention in what is considered to be the preferred embodiment thereof, it is desired that it be understood that the invention is not to be limited other than by the provisions of the following claims.

I claim:

1. A tape folding accessory for handling prefolded tape to be printed by a printing machine, said accessory comprising

an upper tape container,

a lower tape container for containing a supply of prefolded tape to be withdrawn from said lower container and fed past a printing machine and then fed to said upper container,

guide means for guiding the prefolded tape during the just-mentioned travel,

said guide means including a rear guide plate associated with the lower container and extending downwardly therefrom and adapted to receive tape from said lower container and to guide the tape downwardly from said lower container to a roller on said printing machine, and a front guide plate associated with said upper container and extending downwardly therefrom and adapted to receive tape from the just mentioned roller and to guide tape upwardly toward the upper container,

said rear guide plate including upstanding lateral guide portions to engage the side edges of said prefolded tape leaving the lower container to guide the same,

the lower portions of said guide portions being curled inwardly to provide opposed channels to receive the side margins of said prefolded tape after the tape has left the upper portions of said guide portions,

and spring means for engaging said tape and pressing the same against said rear guide plate to flatten the creased portions thereof for ready entry into said channels.



2. A tape folding accessory for handling prefolded tape to be printed by a printing machine, said accessory comprising

an upper tape container,

a lower tape container for containing a supply of prefolded tape to be withdrawn from said lower container and fed past a printing machine and then fed to said upper container,

guide means for guiding the prefolded tape during the just-mentioned travel,

said guide means including a rear guide plate associated with the lower container and extending downwardly therefrom and adapted to receive tape from said lower container and to guide the tape downwardly from said lower container to a roller on said printing machine, and a front guide plate associated with said upper container and extending downwardly therefrom and adapted to receive tape from the just-mentioned roller and to guide tape upwardly toward the upper container,

said rear guide plate including upstanding lateral guide portions to engage the side edges of said prefolded tape leaving the lower container to guide the same,

the lower portions of said guide portions being curled inwardly to provide opposed channels to receive the side margins of said prefolded tape after the tape has left the upper portions of said guide portions,

and spring means for engaging said tape at a place in advance of said channels to press said tape against said rear guide plate and flatten the creased portions thereof for ready entry into said channels,

said spring means including a flexible strip converging with respect to said rear guide plate in a downward direction.

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