United States Patent

[11] **3,578,178**

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[73] Assignee **Uarco Incorporated**
Division of Ser. No. 645,262, June 12, 1967, Pat. No. 3,493,156.

[54] **ADJUSTABLE OUTFEED ASSEMBLY FOR STATIONERY BURSTER**
3 Claims, 3 Drawing Figs.

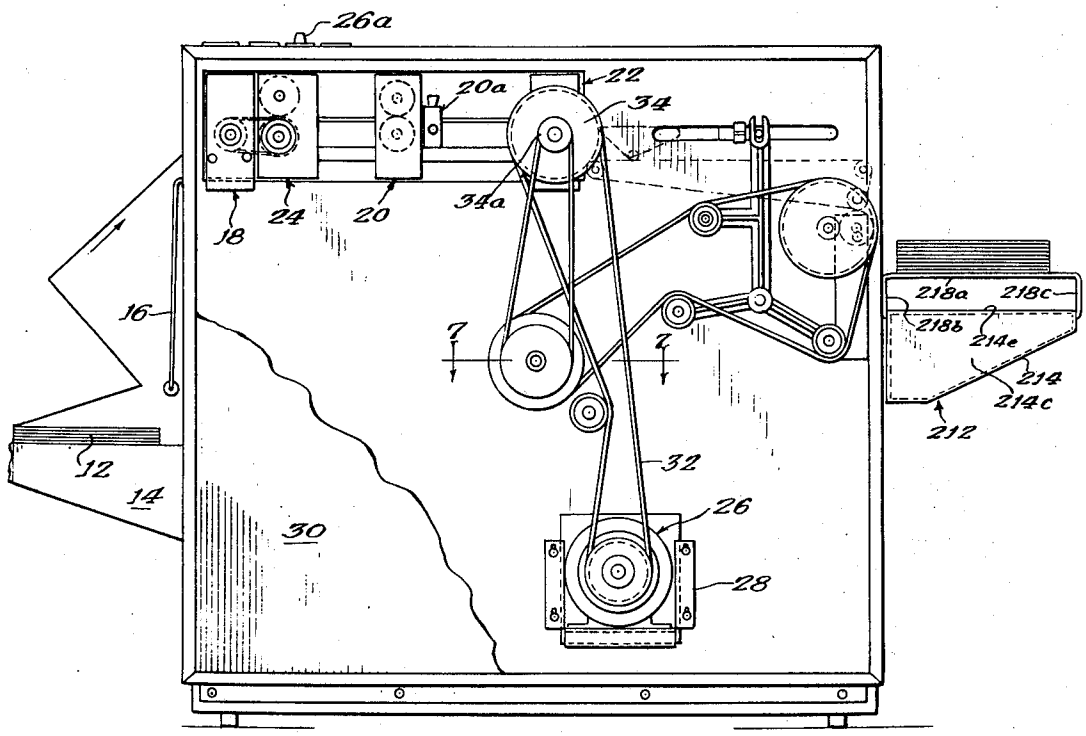
[52] **U.S. Cl.** **211/50**
[51] **Int. Cl.** **A47f 7/00**
[50] **Field of Search** 211/49, 50, 51, 52, 53, 55

[56] **References Cited**
UNITED STATES PATENTS

1,020,175	3/1912	Arnold	211/50
1,070,169	8/1913	Ott	211/50
2,513,474	7/1950	Greer	211/50
3,178,172	4/1965	Lettan	211/50X
3,474,912	10/1969	Pekera	211/50

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ABSTRACT: A stacking tray for use with a stationery burster, the stacking tray having a fixed medial portion flanked by portions movable with respect to the remainder thereof to accommodate uneven marginal areas of stationery dispensed thereon.



Patented May 11, 1971 3,578,178

2 Sheets-Sheet 1

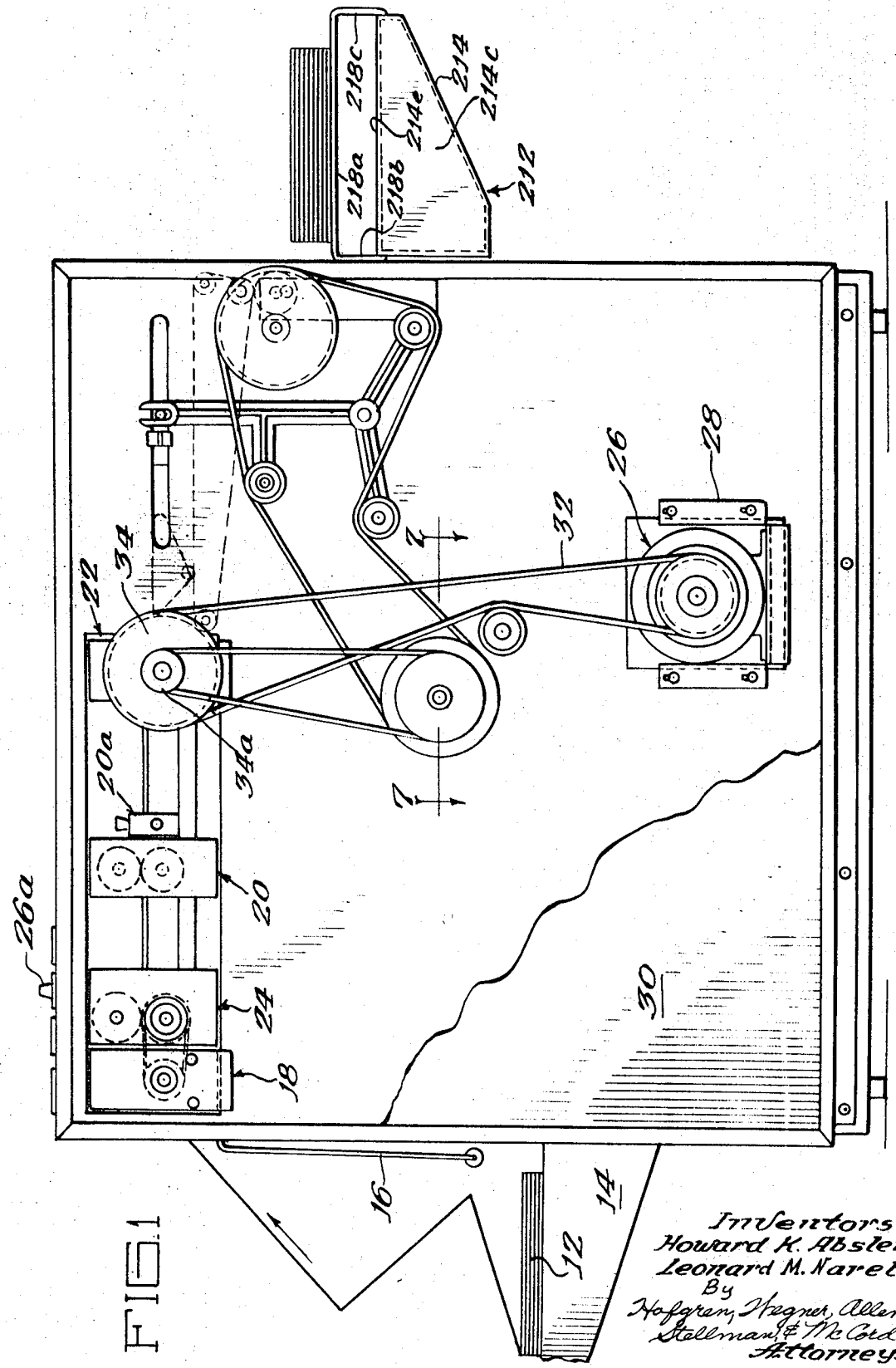


FIG. 1

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FIG. 2

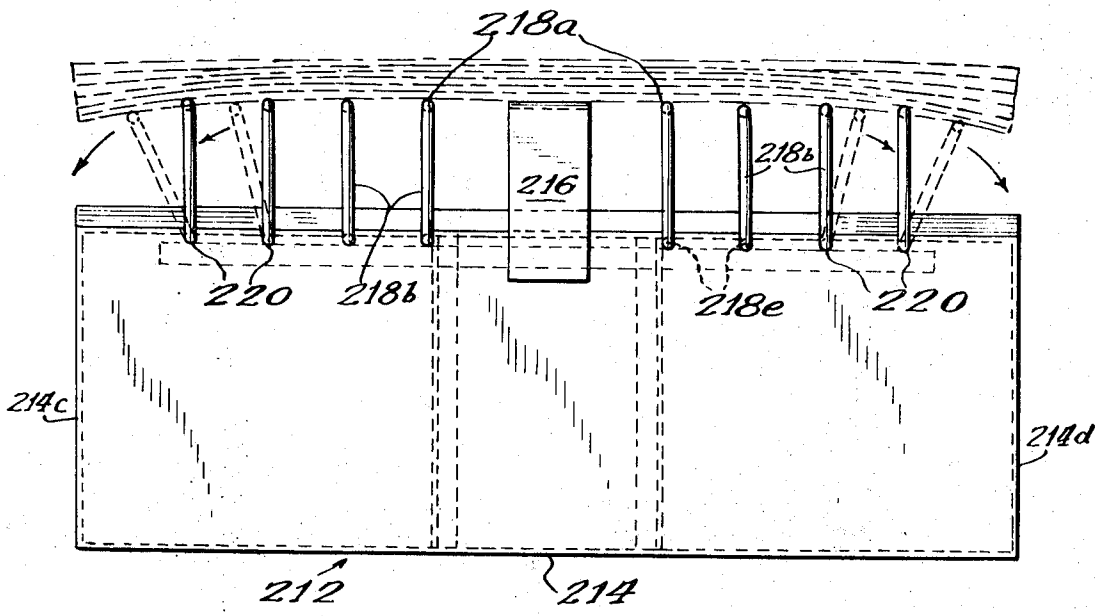
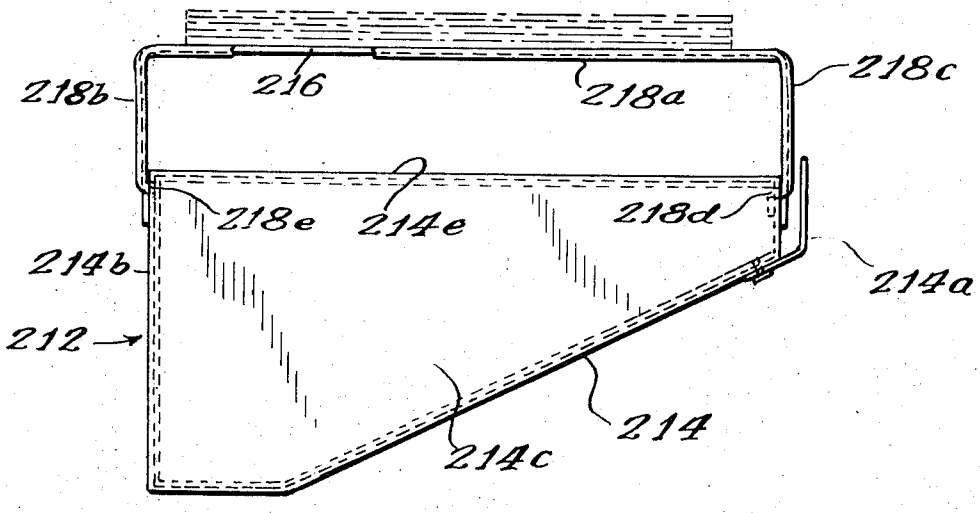

218a
216
218b
220
218b
218e
220
214c
214d
212
214

FIG. 3


218b
216
218a
218c
218e
214e
218d
214b
214a
212
214
214c

ADJUSTABLE OUTFEED ASSEMBLY FOR STATIONERY BURSTER

This is a division of application Ser. No. 645,262, filed June 12, 1967, now U.S. Pat. No. 3,493,156.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to business machines and more particularly to a stacking tray for use with an apparatus for bursting stationery into individual form lengths along transverse lines of weakening.

2. Description of the Prior Art

Generally devices for separating continuous form stationery along transverse lines of weakening have three sets of rollers including an infeed set of rollers for initially feeding the stationery into the mechanism; a movable set of rollers, and a fixed set of outfeed rollers which is driven at a faster rate of speed than the movable set of rollers. The movable set of rollers is adjusted with respect to the fixed outfeed rollers depending upon the dimension of the individual form length which is being separated. A typical example of such a structure is that shown in Pine et al. U.S. Pat. No. 3,161,335 issued Dec. 15, 1964.

From the outfeed set of rollers, the separated stationery form length may be ejected onto a stacking table as shown in the aforementioned Pine patent or onto a movable stacking surface as shown in the Peterson et al. U.S. Pat. No. 3,261,603 issued July 19, 1966. One of the problems of stacking individual form lengths of continuous form stationery on a tablelike surface is that the marginal areas stack thicker than do the central portions thereof due to marginal glue lines common with such forms. When stationery does stack unevenly it is prone to spillage and disarray which may result in the loss of consecutive order of the sheets and loss of time in rearranging the stack.

SUMMARY OF THE INVENTION

This invention is directed, in brief, to the provision of an improved stacking tray for a burster for separating continuous form stationery into individual form lengths along transverse lines of weakening.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary side elevational view of the burster of this invention with portions broken away illustrating part of the drive system thereof;

FIG. 2 is an enlarged end view of the stacking tray connected to the rear of the burster; and

FIG. 3 is a side elevational view of the stacking tray shown in FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The burster **10** of this invention is utilized for processing a stack of zigzag folded stationery **12** which may be fed into the burster from a shelf **14** at the forward end thereof. Where the burster is operated in tandem with printing equipment, stationery fed directly therefrom is held under infeed control with the aid of a pivoted dancer bar **16**. The main function of the burster is to separate the continuous form stationery along transverse lines of weakening into individual form lengths **12***a*. For this purpose, the burster includes an infeed roller assembly **18**, for feeding stationery into the burster; a movable burster roller assembly **20**, having tension means **20***a*; and outfeed roller assembly **22** which is driven at a faster rate of speed than the movable burster roller assembly **20** for separating the form lengths along lines of weakening with the assistance of the initiation of the tearing action by the tension means **20***a*. In general, this type of structure and theory of operation is well known in the art and is typically represented by the Pine et al. U.S. Pat. No. 3,161,335.

In addition, the burster may be provided with other stationery processing means such as a trimmer assembly **24** interposed in the path of stationery travel for removing marginal material from the stationery. A main drive means, such as a motor **26** controlled by switches **26***a* is mounted in the framing **28** which is enclosed by a generally boxlike decorative housing **30**.

Drive components include a main drive belt **32** which is driven by the motor **26** and is reeved about a pulley **34** having a reduced pulley portion **34***a*. The pulley **34** is fixed on the main shaft of the roller assembly **22** and, through related drive structure on the other side of the bursters (not shown), the components of roller assembly **20** and trimmer mechanism **24** are also driven. The burster may further include a paper receiving surface beyond roller assembly **22**, shown in dotted outline in FIG. **1**, for carrying separated stationery sheets to a point for deposit on stacking tray assembly **212**. It is also possible that the tray assembly **212** could be mounted directly adjacent the roller assembly **22** for direct receipt of separated form lengths.

Tray assembly **212** of this invention is fixed to a carriage **208** and includes a frame **214** including a front wall **214***a*, a rear wall **214***b* and sidewalls **214***c* and **214***d* which are spanned by a top surface **214***e*. The outfeed tray includes a relatively wide, rigid U-shaped central support **216** which extends upwardly from the front wall **214***a* and the rear wall **214***b* and span the distance therebetween. A plurality of U-shaped paper support bars **218** including central support surface **218***a* and upright end sections **218***b* and **218***c* are pivotally mounted to the frame of the tray assembly by means of inturned ends **218***d* and **218***e* being received in openings **220** formed in the front and rear walls **214***a* and **214***b*. The bars are frictionally related to the openings **220** so as to permit the bars to be moved from an upright or supporting position to a downwardly folded or retracted position as shown in dotted outline in FIG. **3**.

Frequently continuous form stationery may have marginal areas which tend to have a greater thickness due to the presence of crimp fastening elements, glue lines, or the like. This is especially true in the case of multiple ply forms and particularly more so in the case of those forms which have not been submitted to a trimming operation. In such a case, the stack of burst forms is thicker at the opposite marginal edges. Unless compensated for, the stack assumes an upwardly bowed configuration and is difficult to handle. Frequently it may slip out of an attendant's hands and fall into general disarray and out of sequential order. By mounting the paper support bars **218** for movement between an upright position to a retracted position, a means is provided for accommodating marginal thicknesses in stationery. More particularly, if the bars are folded downwardly as indicated in dotted outline in FIG. **3**, the marginal areas of stationery which may be stacked on the tray assembly **214** may droop downwardly. Thus several hundred plies of stationery may be stacked one on top of the other on the tray assembly before the marginal edges of even multiple ply or crimp fastened forms which have not had the margins removed begin to adopt an upwardly bowed configuration. Prior to that time, the several hundred forms may be removed from the tray assembly safely without the possibility of spillage or disarray thereof. By providing several of the support bars **218** with a pivotal mounting as shown, a means is established for accommodating different widths of form lengths in that one or more of the paper support bars on each side of central support **216** may be pivoted downwardly to accommodate the marginal thicknesses of stationery being processed. The outfeed tray of this invention is provided with a means for accommodating thicknesses in the marginal areas of stationery to assure neat and orderly stacking of the several plies of stationery, which affords optimum stacking of separated form lengths throughout a wide range of speeds from very low to very high speed operation. While the term "burster" has been used throughout to refer to a mechanism for separating continuous form stationery, and the invention herein has been described for use with a "burster," it is to be understood that the invention is generally capable of use with any mechanism which separates continuous stationery into individual form lengths.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as some modifications may be obvious to those skilled in the art.

We claim:

1. A stacking tray for the outfeed assembly of a burster comprising: a stacking tray frame; a medially disposed paper receiving member connected to said frame and including a paper receiving surface lying in a plane spaced outwardly from said frame and movable members on either side of said medial member, said movable members being connected to said frame for movement between a position wherein the movable members generally lie in the plane of the paper receiving member and other positions wherein said movable members lie between said plane of said paper receiving member and the frame, whereby marginal areas of separated form lengths received thereon are permitted to droop relative to the central areas thereof.

2. A stacking tray for the outfeed assembly of a burster, comprising: a frame; a stationery receiving surface on said frame, portions of said stationery receiving surface being movable with respect to the remaining portions; said movable portions being laterally spaced on opposite sides of the central portion and pivoted to the frame for movement between an upright paper supporting position and a retracted position permitting marginal droop of stationery stacked on the tray, to thereby absorb marginal thicknesses in separated stationery stacked on the tray.

3. The stacking tray of claim 1 wherein said movable members are generally C-shaped members having a top and depending sides with the sides terminating in end portions, and wherein the frame has a plurality of spaced openings for movably receiving the end portions of the movable members.