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(54) **FORMING A BOX USING A "C" CASE**

(57) This invention is directed to designing a machine and a box so that one apparatus can be used for inserting the bundle from the top and the side by using two pieces

of cardboard. One piece of the Cardboard is formed into U Channel for loading a bundle into the U Channel from the side or top.

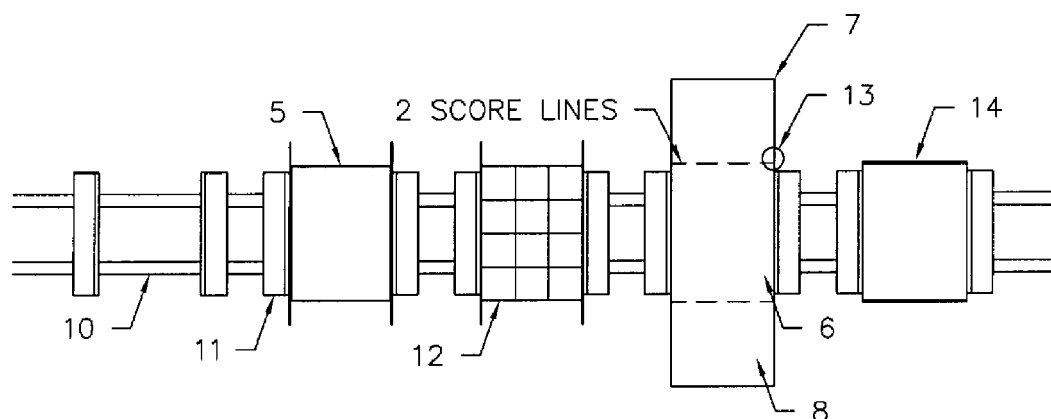


Fig. 4

Description

Technical Field

[0001] This invention relates to packing a box with a bundle of articles or an article by inserting the bundle into the box while the box is on a conveyor. The bundle can be inserted into the box from the top of the box or pushed into the box from the side of the box. The bundle can contain a number of articles such as bottles or containers.

Background Art

[0002] In the prior art bundles of articles are usually placed inside a cardboard box. The two common types of boxes are RSC boxes or wrap around boxes. The RSC is a box made from a single piece of cardboard with flaps. The flaps are usually bent to form the top and bottom of the box. The bottom of the box can be glued or taped to form the box. A bundle of articles is inserted in the open box from the top of the box. The flaps are bent to form the top of the box. The flaps are taped or glued to hold the flaps in position. The wrap around box uses a single piece of cardboard having flaps. When the box is wrapped the flaps are on the sides of the box. A lever on the wrap around machine allows the bundle to be inserted from the top or from the side of the box. A pick and place machine is conventionally used to place a bundle in the box from the top. Likewise a pusher can slide the bundle into the side opening of the box.

Summary of invention

[0003] An objective of the invention is to use less cardboard. Another objective of the invention is to produce an apparatus designed to either allow the bundle to be inserted from the top by a pick and place machine or allow the bundle to be pushed into the box from the side. This invention is directed to designing a machine and a box so that one apparatus can be used for inserting the bundle from the top and the side by using two pieces of cardboard.

Brief description of drawings

[0004]

Figure 1 shows a C case in the shape as a U channel. Figure 2 shows a top sheet placed on top of the U Channel.

Figure 3 shows a box formed by folding the top sheet to form a box.

Figure 4, 5 and 6 shows a U Channel placed on a bucket conveyor.

Description of embodiments

[0005] Figure 1 shows a first piece of cardboard 1 bend

at score lines 2 to form a C Case 5 shaped as a U-Channel. The U-Channel has vertical sides 15 and 16 connected to bottom 17. The perimeter of the C Case 5 has extensions such as flaps 3 to be used for gluing to another piece of cardboard 4. Figure 2 shows a cardboard 4 placed on the top of the C Case 5. Cardboard 4 has three sections 6, 7 and 8. Figure 3 shows section 6 covering the top opening of the C Case and sections 7 and 8 cover the side opening of the C Case to form a box 9. The flaps 3 bond the C case to the second piece of cardboard. Figure 4 and side view figure 5 show a moving bucket conveyor 10 having a C case 5 placed in a bucket 11. The sides of the C Case are held in place by the bucket conveyor. Having the top and sides open, a bundle 12 can be placed on the bottom 17 of the C Case by using a pick and place machine to insert the bundle from the top. In the alternative the bundle can be pushed through the side opening of the C case 5 onto bottom 17. After the bundle or bundles are placed in the C case, the cardboard 4 is placed on top of the C case. Optionally fingers 13 keep section 7 and 8 in a temporary vertical position before folding of the (tabs) flaps. Sections 7 and 8 are bent along their score lines 2 to form a C shape (u-Channel). At substantially the same time, the flaps 3 of the first piece are bent into position to be glued on the sides of cardboard 4 to form box 14. The movement of the conveyor can be continuous or intermittent depending on the desired movement of the conveyor.

[0006] This application claims priority based on US patent application number US 15064346 filed March 8, 2016 titled, Forming a Box Using a "C" Case. The inventor is Alain Cerf

Claims

1. A process of forming a box with a first and second piece of cardboard comprising, forming the first piece of cardboard into a U- channel having an open sides and open top having extensions along the perimeter for bonding to the second piece of cardboard, placing the U- channel on a conveyor, placing a bundle into the a U channel, placing the second piece of cardboard on top of the U channel to covers up the top opening of the U-channel, bending the second piece of cardboard to cover up the open sides of the first piece of cardboard, and bonding the extensions from first of cardboard to the second piece of cardboard to form a box.
2. A process according to claim 1 wherein the extension are flaps on the perimeter of the first piece of cardboard for bonding to the second piece of cardboard.
3. A process according to claim 1 including placing the bundle into the U Channel from a side of the U Channel.

4. A process according to claim 1 including placing the bundle into the U Channel from the top of the U Channel..
5. An apparatus for forming a box on a conveyor with a first and second piece of cardboard comprising, means for forming the first piece of cardboard into a U-channel having open sides and an open top with extensions around the perimeter for bonding to the second piece of cardboard, means for placing the U- channel on a conveyor, means for placing a bundle into the U channel, means for placing the second piece of cardboard on top of the U channel to covers up the top opening of the U-channel, means for bending the second piece of cardboard to cover up the open sides of the U-channel, means for bonding extensions along the perimeter along the first piece of cardboard to the second piece of cardboard to form a box.
6. An apparatus according to claim 5 wherein the means for placing the bundle into the U Channel includes means for placing the bundle into the U Channel from the side or top of the U Channel.

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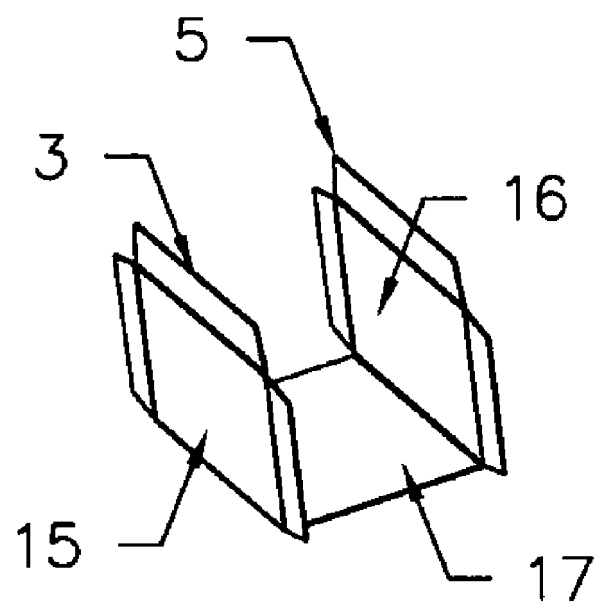


Fig. 1

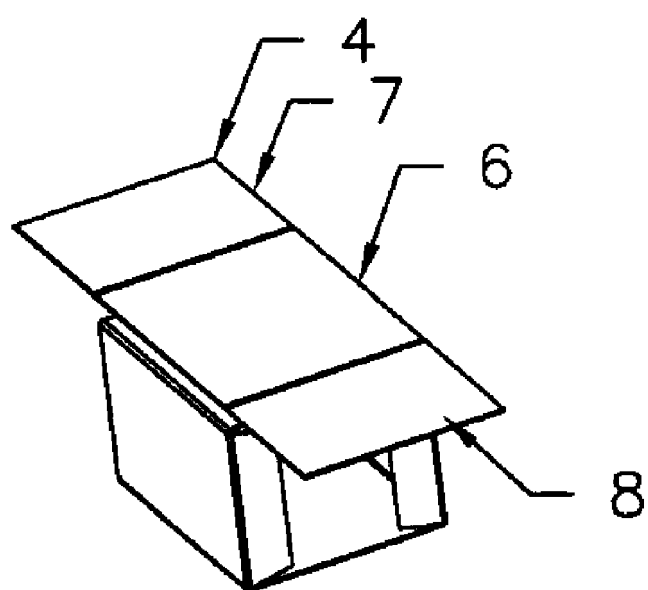


Fig. 2

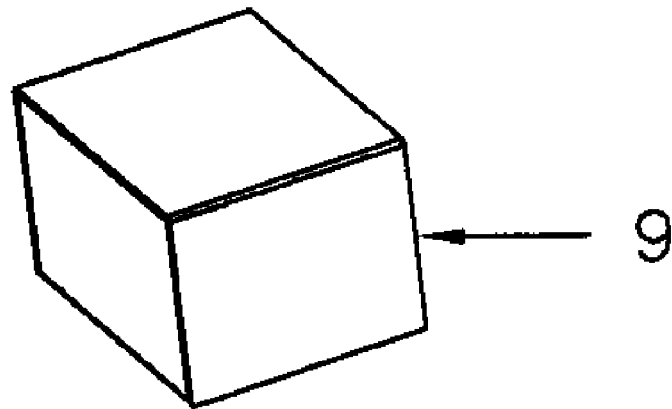


Fig. 3

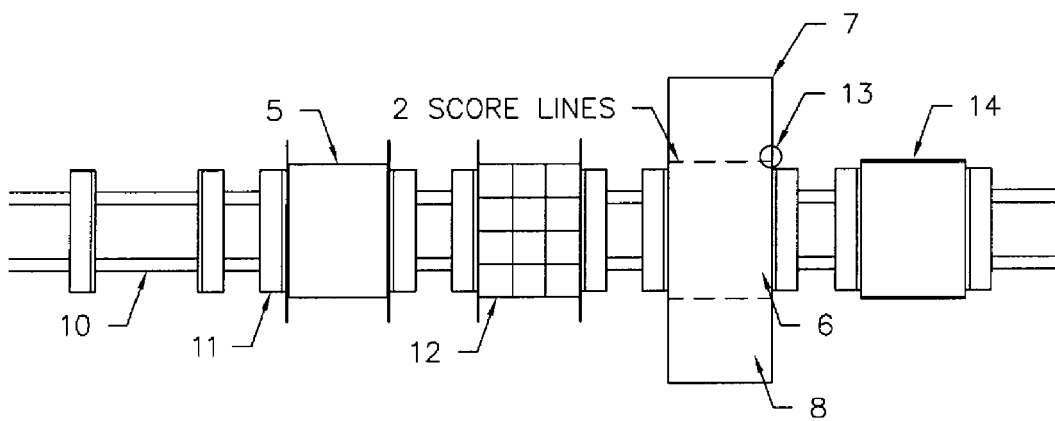


Fig. 4

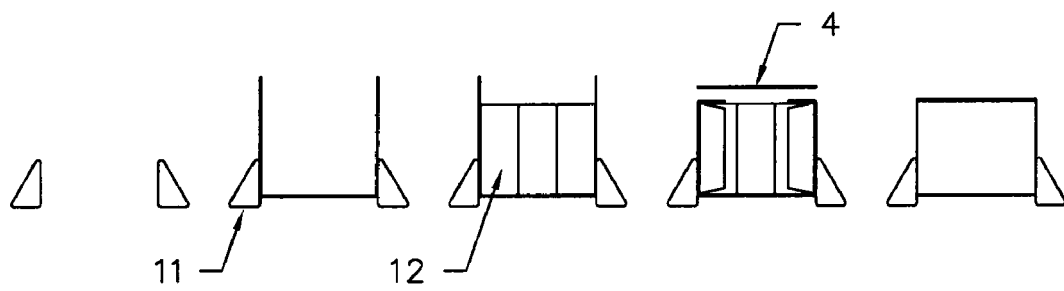


Fig. 5

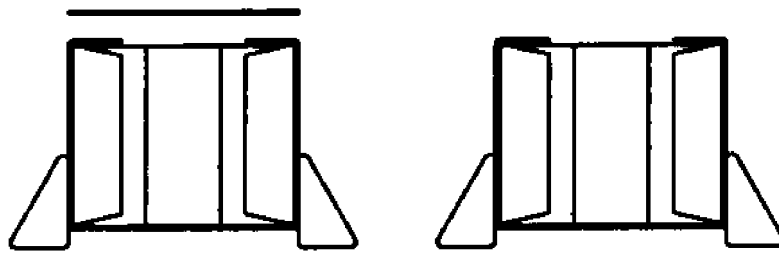


Fig. 6



EUROPEAN SEARCH REPORT

 Application Number
 EP 17 15 7264

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 31 17 722 A1 (BINI ANSELMO [IT]) 25 February 1982 (1982-02-25) * figures 1-6 * * page 5, paragraph 1 * * page 8, paragraph 2 - page 9, paragraph 5 * * page 10, paragraph 2 - page 11, paragraph 1 *	1,2,5,6	INV. B65B5/02
A	----- GB 2 299 565 A (FOCKE & CO [DE]) 9 October 1996 (1996-10-09) * figure 4 *	1-6	
A	----- WO 2006/036730 A2 (MEADWESTVACO PACKAGING SYSTEMS [US]; LEBRAS PHILIPPE [FR]) 6 April 2006 (2006-04-06) * figure 3 *	1-6	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 July 2017	Examiner Weyand, Tim
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 15 7264

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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12-07-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 3117722 A1	25-02-1982	DE 3117722 A1	25-02-1982
		FR 2482048 A1	13-11-1981
		IT 1194654 B	22-09-1988
GB 2299565 A	09-10-1996	DE 19512547 A1	10-10-1996
		GB 2299565 A	09-10-1996
		IT MI960641 A1	02-10-1997
		JP H08282611 A	29-10-1996
		US 6283363 B1	04-09-2001
WO 2006036730 A2	06-04-2006	CA 2579975 A1	06-04-2006
		EP 1827982 A2	05-09-2007
		US 2007277481 A1	06-12-2007
		WO 2006036730 A2	06-04-2006

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 15064346 B [0006]