United States Patent [19]

Ruppenthal

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[54] **PAPER STORAGE AND BALING CONTAINER**

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[52] **U.S. Cl.** ..... **206/46 R,** 100/34, 206/65 B, 206/83.5, 211/50, 248/346, 248/361 A

[51] **Int. Cl.** **B65b 13/18,** B65d 85/00

[58] **Field of Search** ..... 100/34; 206/49, 51, 206/64, 65 B, 83.5, 46 R, 46 H; 229/87 R, 47; 248/346.1, 361 A, 346; 211/50; 108/27, 28, 55

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[57] **ABSTRACT**

A paper storage and baling device consisting of substantially rigid board member on which to stack half-folded newspapers and the like, said board member containing pre-determined lengths of baling strands to be pulled out and secured around a sufficient quantity of stacked papers forming a bale or bundle.

5 Claims, 6 Drawing Figures

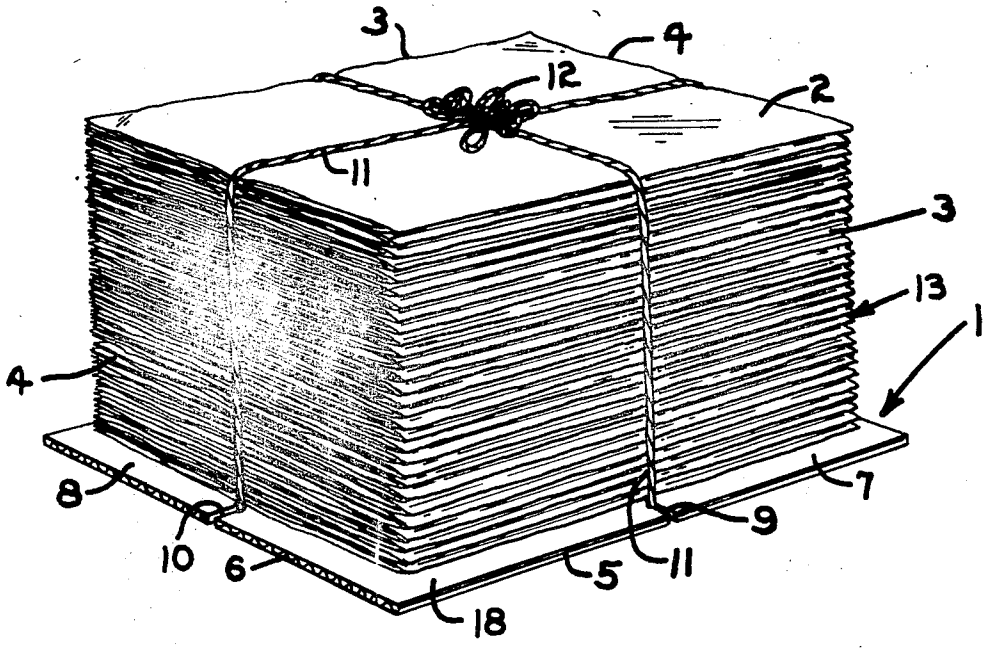


Fig. 1.

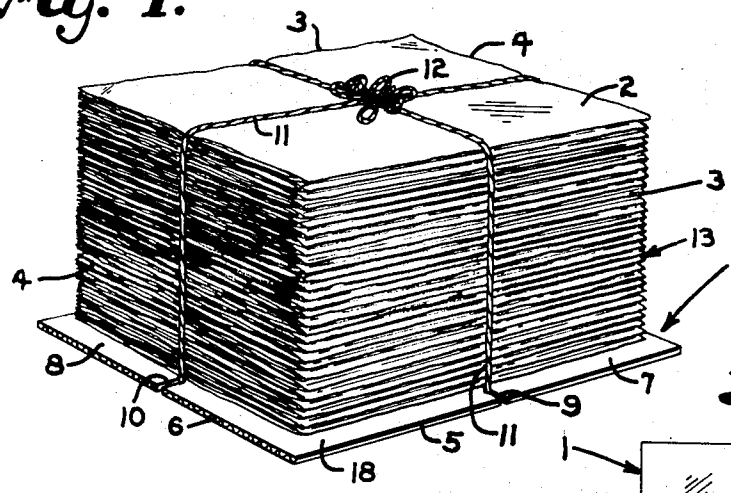


Fig. 2.

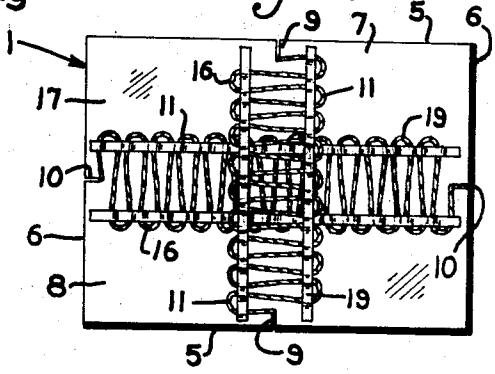


Fig. 3.

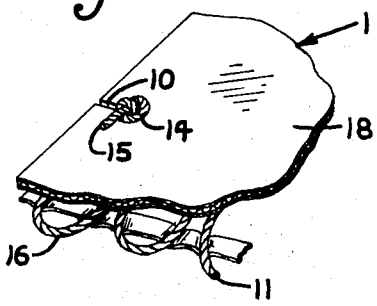


Fig. 4.

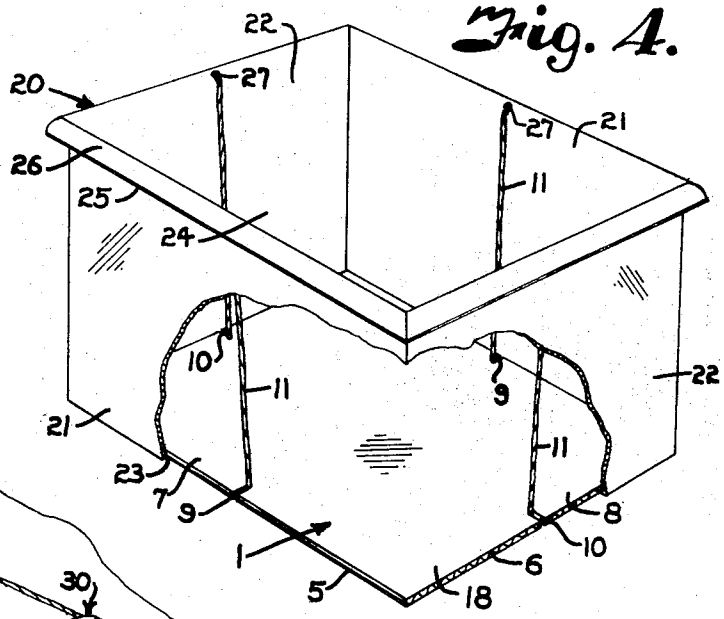


Fig. 5.

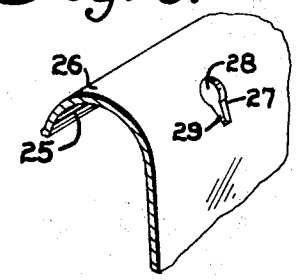
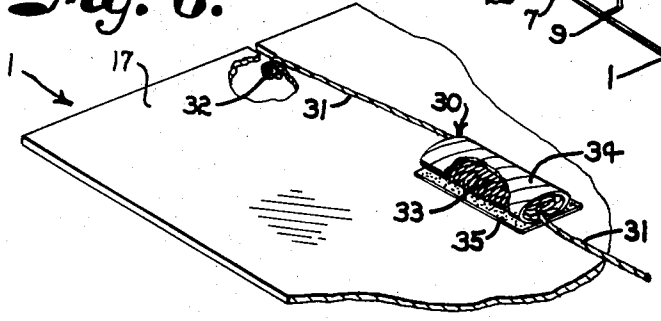


Fig. 6.



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PAPER STORAGE AND BALING CONTAINER

The present invention relates to paper storage and baling or bundling devices and more particularly to a paper storage and baling device having a substantially rigid board member containing pre-determined lengths of baling strands which becomes the bottom member of the completed paper bale or bundle.

The principal objects of the present invention are: to provide a new and improved paper storage and baling device making it convenient to store half-folded newspapers and the like and to tie same into bales or bundles once a sufficient quantity has accumulated; to provide such a device having a substantially rigid bottom board member containing predetermined lengths of baling strands and which will be the bottom member of the completed paper bale; to provide such a device wherein the length of baling strands are supported on the said rigid member in a manner to be progressively released to extend therefrom in response to pull on the free ends of the strands; to provide such a device which may be used separately or in combination with a suitable container to perform the desired storage and baling functions; and to provide such a device which is easy to use, economical to manufacture, and is particularly well adapted for the proposed use.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a perspective view of the paper storage and baling device and completed paper bale.

FIG. 2 is a bottom view of the paper storage and baling device illustrating baling strand storage means.

FIG. 3 is an enlarged partial perspective view of the top surface of the paper storage and baling device showing the positioning of the baling strand prior to the baling operation.

FIG. 4 is a perspective view of the modified form of the paper storage and baling device.

FIG. 5 is an enlarged fragmentary perspective view illustrating cord retainer means in the upper wall section of the modified paper storage and baling device.

FIG. 6 is an enlarged perspective detail showing baling strand storage and retainer means in the modified paper storage and baling device.

As required, detailed embodiments of this invention are disclosed herein, however, it is to be understood that the embodiments are merely exemplary of the invention which may be embodied in many forms that are different from these illustrated embodiments presented herein, therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting but merely as a basis for the claims actually defining the scope of this invention. In this regard, it is to be recognized that paper storing and baling devices in accordance herewith may be embodied in various forms different from those illustrative embodiments contained herein and that disclosed herein is presented only as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriate detailed structure.

Since burning is prohibited it is necessary to dispose of collections of newspapers and the like. It is now desirable to collect the papers for charitable organizations and the like, but they present problems in handling. The present invention is to facilitate the collection and handling of newspapers. It contemplates a structure with pre-determined lengths of baling strands that can be used as a unit with a stack of half-folded newspapers and when desired the strand is tensioned around the stack and secured to form a bundle or bale.

Now referring to the drawings for a more detailed description of the present invention, FIG. 1 illustrates a completed bale of newspapers and the like and comprises a baseboard 1 underlying a stack of papers 2 such as half folded newspapers and the like. The papers are generally rectangular with side edges 3 and end edges 4. The baseboard preferably is slightly larger than the conventional half-folded newspaper whereby the side edges 5 and end edges 6 thereof are spaced outwardly providing margins 7 and 8 between same and the side and end edges 3 and 4 respectively of the stack of newspapers. The baseboard is preferably made of low cost disposable material and in the illustrated structure is a double faced corrugated board. It has notches 9 and 10 extending inwardly from the edges 7 and 8 to adjacent the side and end edges of the stack of paper. The notches or slots are preferably equally spaced from the ends of the respective edge and therby substantially centrally disposed and of suitable width to receive a suitable strand 11 such as a flexible twine or cord for tying the bundle. Strand 11 extends under the board through the respective slots and over the top where opposed ends of a strand are brought together and tied in a suitable knot as at 12, forming an assembly consisting of the board 1, strands 11 and stack of papers 2 to complete the paper bale 13.

The board 1 and strands 11 are prepared as a baling unit at a factory wherein the strands are releasably secured to the board and held thereon during transportation and storage until time for use in forming a bale. In the structure illustrated in FIGS. 2 and 3 strands 11 are cut to a suitable length and provided with abutment members 14 adjacent to ends 15. The abutment members may be of any suitable structure and are illustrated as knots in the strand. In the forms shown in FIGS. 2 and 3 the strands are arranged in a plurality of the reverse loops 16 whereby the necessary length to extend around the respective dimension of the bale can be arranged on bottom face 17 of the board and be within the confines thereof with the ends extending through the respective slots with the knots engaging the upper face 18 of the board. The strands are held in place by a suitable fastening device providing a releasable connection and in the illustrated structure a fastening device is adhesive tape 19 extending across the plurality of reverse loops and engaging the face 17 of the board between the strands.

In preparing an arrangement of the reverse loops of strand, a suitable length thereof has the abutments 14 placed at the ends and then said strand is reeved back and forth around two rows of pegs or pins spaced laterally apart whereby as the strand goes around each peg it forms a loop and then it is reeved around a peg in the opposite line to form a reverse loop. The fastening devices 19 are then applied to the reverse loops inside of but adjacent the pegs to adhere the strands to the tape and that assembly is then removed from the pegs, applied to the bottom face of the board and the ends of the strand extended through the respective slots as illustrated in FIG. 2.

The baling device as illustrated in FIG. 2 may be used by placing same on a supporting surface with the bot-

tom face 17 and strands thereon downward. The newspapers are then applied to the upper surface 18 to form the stack 2. When the desired stack is in place the opposite ends of a strand 11 is grasped and pulled. The pull causes the strand to be progressively released from the securing tapes 19 whereby the strand can be pulled upwardly and extend across the top of the stack of papers. The strand is pulled tight whereby it extends straight across the bottom face of the board and through the respective slots. The ends are then tied as at 12. The ends of the other strand are grasped and the same procedure followed to bring it tight and tied in a knot to complete the bale 13.

In the structure shown in FIGS. 4 and 5 a holder 20 is used with the board 1 and strands 11 to form an assembly particularly convenient for receiving the papers. The holder 20 is preferably formed of rigid material such as plastic, cardboard, metal or the like with side and end walls forming an open top structure of suitable size and shape to receive half folded newspapers and the board 1 for movement downwardly therethrough. The holder may have a bottom wall on which the board 1 rests, however, in the illustrated structure the holder consists of opposed side walls 21 and opposed end walls 22 connected together to form a tubular structure with an open bottom 23 and an open top 24. It is preferred that certain walls have structure forming hand-holds 25 and in the illustrated structure both the side and end walls have out-turned portions 26 in the form of curved flanges that will serve as the hand-holds. Centrally located in each of the walls adjacent the out-turned portions there is structure to releasably receive the enlarged end portions 14 of the strands and retain the strands during stacking of the papers on the board 1. In the structure shown the strand retainers are in the form of keyhole slots 27 having a large portion 28 that will pass the knots or enlarged portions 14 and a narrow portion 29 to receive the strands but prevent the knots from passing therethrough.

In using a structure with a holder as shown in FIGS. 4 and 5 the board 1 is placed at the open top 24 and the strands are pulled sufficiently whereby the enlarged portion 14 may be inserted through the enlarged portion 28 of the respective keyhole slot to engage the end of the strand therewith. When this is completed for each of the strand ends in the respective openings, the board is pushed downwardly to rest on the support for the holder. This applies tension to the strands to pull portions of same from the releasable connection with the bottom of the board to accommodate the height of tee holder, the remainder of the strands being retained on the bottom 17 of the board. The papers 2 are stacked on the board 1 and when the stack is completed the opposite ends 14 of the strands 11 are released and the strands pulled to release all of the looped portion under the board and form a straight member extending thereunder. The free ends of the strand are then pulled across the top of the stack and tied as at 12. The same operation is repeated with the other strand to complete the bale 13. The holder 20 is then lifted from the bale leaving the bale 13 resting on the support surface for later removal.

In the form of the invention illustrated in FIG. 6 the board 1 is arranged with the strands retained on the bottom 17 in the form of a spiral coil 30 that permits release in response to pull on the strand. In this form of the invention a strand 31 of suitable length has abutments or knots 32 formed adjacent the ends and the intermediate portion is wound on a mandrel or the like in the form of hellical spiral 33. A suitable bonding member 34 is applied to the exterior of the spiral. In the illustrated structure bonding material is adhesive tape wound on the spiral to adhere to same and hold the convolutions in place. The strand is then slipped from the mandrel flattened and suitably adhered to the bottom 17 of the board as suitable fastening means such as adhesive 35. It is preferred that the axis of the spiral be substantially in line with opposed slots at the edges of the board 1. In use the board with the spiral strands is handled in the same manner as described in the above forms where the board has reverse loops.

It is to be understood that while I have illustrated and described one form of my invention, it is not to be limited to the specific form or arrangement of parts herein described and shown.

I claim:

1. A device for receiving and baling newspapers and the like comprising:
   a. a flat substantially rigid paper board having opposed faces with one of said faces for engaging a stack of folded newspapers when positioned thereon, said board having a length and width substantially corresponding to the length and width of said folded newspapers, said board having opposed edges and a notch extending inwardly from each edge and substantially equidistant from ends of the respective edges;
   b. lengths of strand for securing the stack of newspapers to said board in a bale, one length of strand having suitable length to extend around the board and stack of newspapers in one direction and be tied, a second length of strand having suitable length to extend around said board and stack in the other direction and be tied;
   c. retainer means on free ends of a respective length of strand, said free ends engaging in said notches in opposed edges of the board and the retainer means engaging said one face adjacent the respective notch to temporarily hold said free end of the strands;
   d. means releasably securing the lengths of strand on the other of the opposed faces of said board and operative to progressively release the strands in response to pull on the free ends thereof.

2. A baling device as set forth in claim 1 wherein:
   a. said board is double faced corrguated board;
   b. said retainer means on the free ends of the strands are abutment members formed in the respective strand.

3. A baling device as set forth in claim 2 wherein:
   a. the lengths of strands are each in a series of loops on said other opposed face of the board;
   b. the means releasably securing the strands is adhesive tape engaging the loops.

4. A baling device as set forth in claim 3 wherein:
   a. the loops of the strands are substantially in a flattened helical spiral and the adhesive tape is wound on the extension thereof.

5. A baling device as set forth in claim 3 wherein:
   a. the loops of the strands are in flat reverse form engaging said other opposed face of the board and the adhesive tape extends across the loops and engage said other opposed face of the board.

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