G. W. DINSMOOR.

METHOD OF APPLYING COVERING TO BOARDS AND OTHER ARTICLES.

APPLICATION FILED NOV. 24, 1913.

1,103,402.

Patented July 14, 1914.

3 SHEETS—SHEET 1.

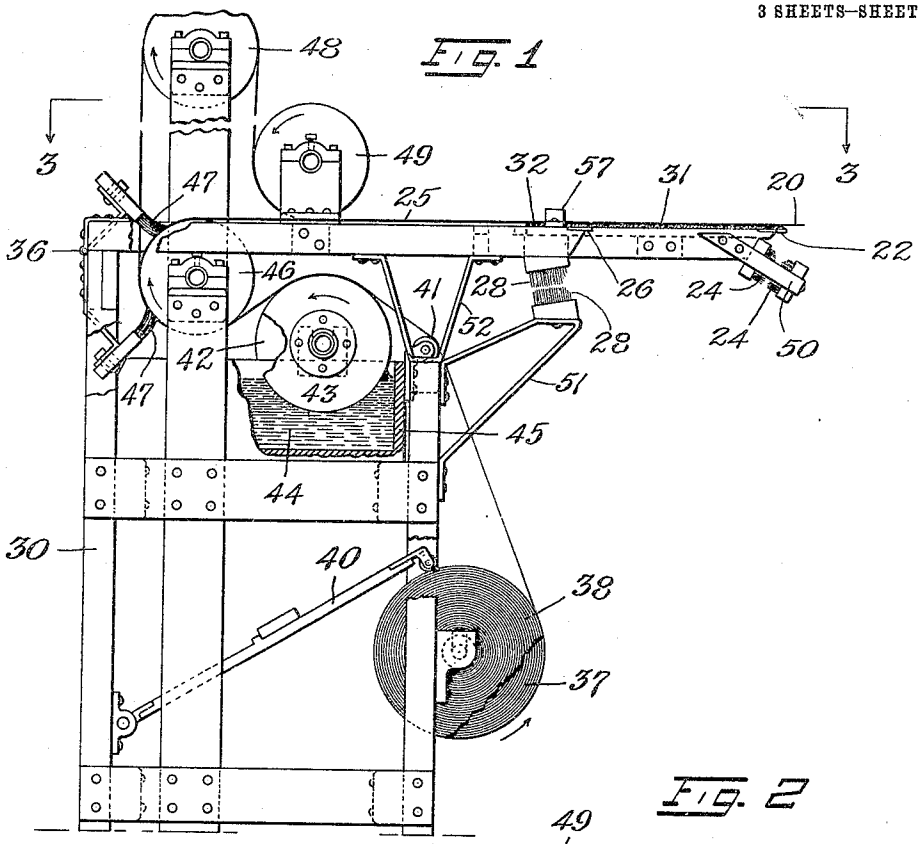


FIG. 1

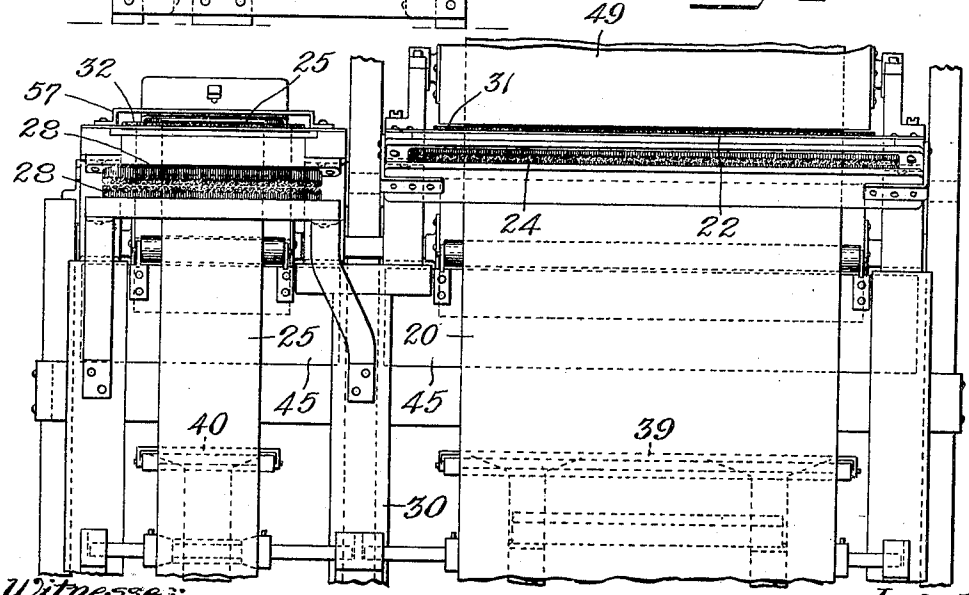


FIG. 2

Witnesses:
P. V. Gazette
F. P. Pohlstone

Inventor:
George W. Dinsmoor
by Wright Brown Quinby & May
Attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

G. W. DINSMOOR.

METHOD OF APPLYING COVERING TO BOARDS AND OTHER ARTICLES.

APPLICATION FILED NOV. 24, 1913.

1,103,402. Patented July 14, 1914.

3 SHEETS—SHEET 2.

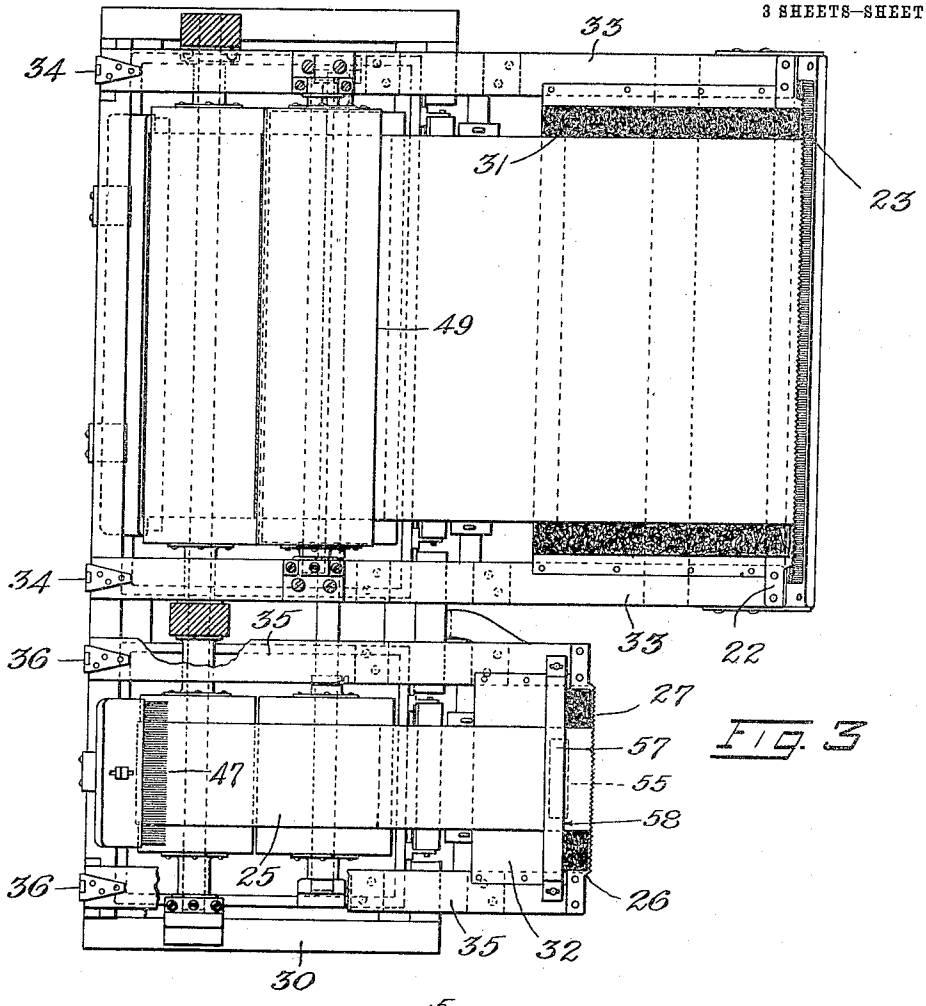


FIG. 3

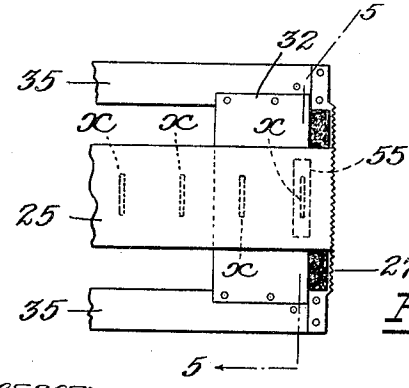


FIG. 4

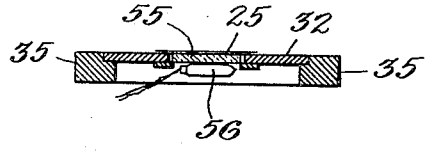


FIG. 5

Witnesses:
C. J. Pezzetti
F. R. Parkstone

Inventor:
George W. Dinsmoor
by Keyes, Brown, Dunlap & Hay
Attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

G. W. DINSMOOR.

METHOD OF APPLYING COVERING TO BOARDS AND OTHER ARTICLES.

APPLICATION FILED NOV. 24, 1913.

1,103,402. Patented July 14, 1914.

3 SHEETS—SHEET 3.

Fig. 6

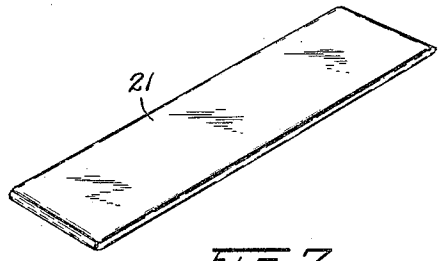


Fig. 7

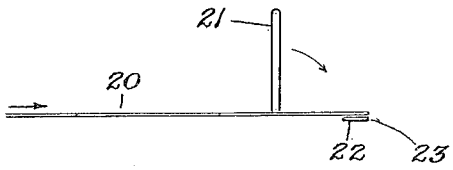


Fig. 8

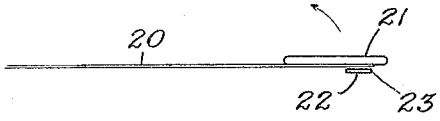


Fig. 9

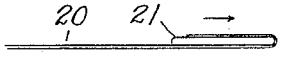


Fig. 12

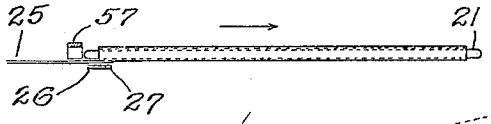
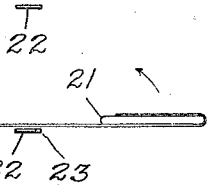


Fig. 10



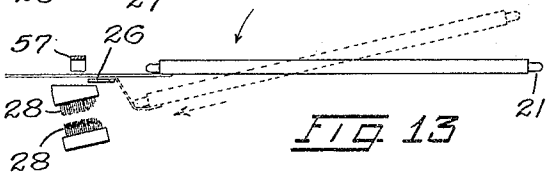
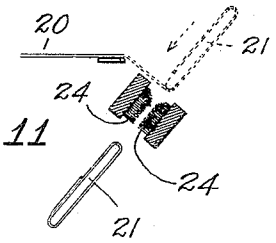


Fig. 13

Fig. 11



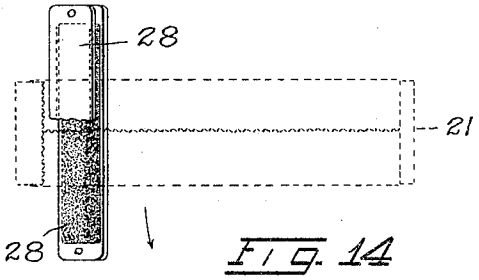
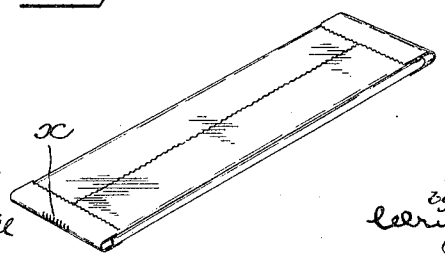


Fig. 14

Fig. 15



Witnesses:
F. P. Peyetti
F. P. Pelstone

Inventor:
George W. Dinsmoor
by Cowright Brumbaugh & May
Attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. DINSMOOR, OF LAWRENCE, MASSACHUSETTS.

METHOD OF APPLYING COVERING TO BOARDS AND OTHER ARTICLES.

1,103,402. Specification of Letters Patent. Patented July 14, 1914.

Application filed November 24, 1913. Serial No. 802,650.

To all whom it may concern:

Be it known that I, GEORGE W. DINSMOOR, a citizen of the United States, and resident of Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Methods of Applying Covering to Boards and other Articles, of which the following is a specification.

The object of the present invention is to provide an apparatus adapted to be used for putting paper covers on boards.

In mills which produce textile fabrics it is customary to roll such fabrics on boards to form the bolts which are placed on sale, and the apparatus shown by the accompanying drawings is designed primarily for covering boards used for the purpose stated, although it is apparent that the invention may be used for other purposes, such as covering and labeling boxes.

Of the accompanying drawings: Figure 1 illustrates an apparatus embodying my invention, the figure showing the apparatus in side elevation and partly broken away. Fig. 2 represents a front elevation of the apparatus, the lower portion thereof being broken away. Fig. 3 represents a horizontal section showing the structure below the plane of line 3—3 of Fig. 1. Fig. 4 represents a top plan view, partly broken away, of the structure at the bottom of Fig. 3. Fig. 5 represents a vertical section in the plane indicated by line 5—5 of Fig. 4. Fig. 6 represents a perspective view of a board which has not been covered. Figs. 7, 8, 9, 10 and 11 are diagrammatic views showing successive stages of the operation by which the body portion of a board is covered. Figs. 12 and 13 are diagrammatic views showing successive stages of an operation for covering one end of a board. Fig. 14 represents a top plan view of the end-wipers included in Fig. 13, one of said wipers being partly broken away, and a board being indicated by dotted lines as having been passed between said wipers. Fig. 15 represents a perspective view of a board whose body portion and whose ends have been covered.

The same reference characters indicate the same parts wherever they occur.

Before describing the apparatus completely I will describe the operations by which the covering material is applied.

In the present instance two strips of paper of indeterminate length are used. These strips are drawn from rolls as required. One strip is used for covering the body portion of the board, and another strip is used for covering the end portions. Each strip is coated on one side with suitable adhesive material, such as glue, to cause the strip to adhere to the board. In the present instance the adhesive material is applied to the strips by rolls over which the strips are drawn from the supply rolls to the point of delivery.

Referring to Figs. 6 to 15, a strip 20 of covering material, such as paper, is drawn horizontally over a suitable table hereinafter described. In beginning a series of operations, the strip 20 is drawn a sufficient distance to carry the coated portion to the point of delivery, the preceding uncoated portion being preferably torn off and thrown away. The coated side of the strip is uppermost at the point of delivery, which point is at the right of Fig. 7. A board 21 to be covered is first laid upon the strip as shown by Fig. 8, this figure showing the board in end elevation. The board is then turned over upon its opposite side as shown by Fig. 9, whereby the strip is folded about one edge of the board. The board is then moved bodily to the right to the position indicated by Fig. 10, thereby drawing the strip 20 with it. The strip is thus passed over a stationary cutting bar 22 which has a cutting edge 23, the latter being preferably serrated. If the board be rocked from the position shown by Fig. 10 to that shown by Fig. 11, it will be in the plane of a passageway between coöperative wipers or brushes 24. A bodily edgewise movement of the board from the position indicated by dotted lines to that indicated by solid lines in Fig. 11 will cause the strip to be severed by the cutting edge 23 and will cause the loose flap to be wiped over the forward edge of the board and laid backwardly upon the portion first applied to the board, the first and last portions being thus lapped and smoothed against the board by the action of the wipers. The board is now ready to have its ends covered. First one end is placed upon a strip 25 of paper or other suitable material in the position shown by Fig. 12. The strip 25 is coated upon its upper side with adhesive material and is fed to the point of delivery in the same manner as the strip 20. The adhesion of the strip 25 causes the strip to be fed

when the board is moved in the direction of the arrow in Fig. 12, the strip being thereby carried over and beyond a cutting bar 26 which has a cutting edge 27 which is preferably serrated. If the board be now rocked from the position indicated by solid lines in Fig. 13 to that indicated by dotted lines, it will carry the strip 25 downwardly over the cutting edge 27 and the board will be in line with the passageway between coöperative wipers or brushes 28, 28. From the dotted line position the board will be passed between the wipers, thus causing the strip to be severed by the cutting edge 27 and causing the loose flap of the strip to be folded backwardly by the upper wiper 28 and thereby wiped smoothly over the foremost edge of the board and pressed firmly against the upper side of the board and body covering. Fig. 14 includes dotted lines representing the last-described position of the board, from which position the board may be removed by movement in the direction of the arrow in Fig. 14, the passageway between the wipers 28 being open at the end of the wipers to permit removal of the board. The board may now be reversed to place its uncovered end upon the strip 25 as shown by Fig. 12, and the end-covering operation just described may be repeated. When both ends of the board have been thus covered, the board has the appearance shown by Fig. 15 and will be ready for use when the adhesive material has set and become sufficiently hard. The board throughout the operation just described will be handled manually.

Referring now to the structural features of the apparatus, Fig. 1 shows a suitable frame 30 upon which are mounted two operating tables 31 and 32, said tables being preferably covered with felt or other suitable soft material adapted to press the coated strips into any slight hollows or depressions which might be present in the board 21. The table 31 is arranged to support the strip 20, and the table 32 is arranged to support the strip 25. The table 31 is mounted upon a tilting frame which comprises side bars 33 and suitable tie bars which need not be described. The rear ends of the bars 33 are connected with the main frame 30 by hinges 34, the table frame being thereby adapted to be swung upwardly and backwardly from operative position. The operating table 32 is mounted in substantially the same manner upon a tilting frame which comprises side bars 35 and suitable tie bars, the rear ends of the side bars being connected with the main frame 30 by hinges 36. The two cutting bars 22 and 26 are mounted upon the forward or delivery ends of the operating tables.

The rolls of paper from which the covering material is drawn are indicated at 37 and 38 in Fig. 1, the roll 38 being partly broken away to expose a part of the roll 37. These rolls are supported by suitable brackets on the frame 30 and are adapted to be rotated to let off the strips by pulling the strips as hereinbefore explained. Each roll is provided with a device for retarding its rotation for the purpose of keeping the strips taut. Suitable devices for this purpose are indicated at 39 and 40. The strips pass over idle rolls 41 and then over glue-applying rolls 42 and 43 respectively. The rolls 42 and 43 are mounted so that their peripheries are partly immersed in glue 44 contained in suitable reservoirs 45. The strips pass from the glue-applying rolls to idle rolls 46 with which stationary wipers 47 coöperate to wipe off excess glue from the strips, said wipers being arranged over the reservoirs 45 so that the excess glue wiped off will drop back into the reservoirs. The strip 20 passes from roll 46 over a roll 48 and under a roll 49 whose lowest point is substantially in the horizontal plane of the operating table 31. The strip 25 passes directly from its roll 46 to the operating table 32. The rolls 43, 46 and 48 are supported by the stationary frame 30, but the roll 49 is supported by the tilting frame which carries the operating table 31.

The wipers or brushes 24 are supported by brackets 50 carried by the side bars 33. The upper wiper 28 is secured to the under side of the side bars 35, and the lower wiper 28 is supported by brackets 51 secured to the frame 30. Each table-supporting frame is provided with brackets 52 which are adapted to rest upon the frame 30 when in operative position as shown by Fig. 1.

It may sometimes be desirable to provide the covering material with printed matter to indicate the character of the material which is to be wound around the boards. As it is customary to wind such material around the longitudinal edges of the board and leave the ends exposed, I have contemplated printing the end-covering strip at suitable intervals with whatever mark or descriptive matter may be desired. In Fig. 4 I have represented conventionally by dotted lines at x, x, a series of forms each representing suitable printed matter borne by the under side of the strip 25. These forms x, x are spaced equidistantly from each other, with the intention of having one appear at each end of a covered board. In order to enable the operator to obtain the desired register of the forms x with the ends of the boards, I have provided the table 32 with an insert 55 of translucent or transparent material, such as glass, and beneath this insert I have placed a suitable illuminator such as an electric incandescent lamp 56. With the exception of this insert the table 32 is made of opaque material in order to exclude light

from the under side of the strip, excepting at the point where the insert is arranged. As the strip 25 is fed forward, the forms *x* pass over the translucent insert, and because of the translucency of the strip and the opaque quality of the forms, the operator may see each form as it registers with the insert. The insert is disposed at a predetermined distance from the severing edge 27, in the present instance the distance being one-half the distance between the centers of adjacent forms *x*.

This device is used as follows:—The foremost form *x* registers with the center of the insert 55, and is visible provided the lamp 56 is illuminated. The operator lays one end of a board 21 upon the portion of the strip 25 between the severing edge 27 and the foremost form *x*, with the end of the board in register with the foremost edge of the said form. Having thus adjusted the board relatively to the form, it is assured that the form will appear at the end of the board when the strip has been severed and folded back upon the upper side of the board as hereinbefore explained. Following the registering operation, the operator feeds the strip forward by drawing the board, in the meantime watching for the next form *x* to register with the illuminated insert. If the feeding movement be stopped when the next form is in the center of the insert, the strip will be so adjusted with relation to the severing edge 27 that the strip will be severed midway between the first and second forms when the severing operation hereinbefore explained is performed, and the remainder of the strip will be in the desired position for the next operation. This illuminated insert, when arranged as described with relation to the severing edge, indicates, first, the desired position of the forms at the ends of the board; second, the desired length of feeding movement of the strip 25; and, third, the desired position for severing whereby the ends of the attached portion will be of equal length on opposite sides of the board. If the strip has no forms whereby its feeding movement and the desired register of the boards may be determined, I may employ a gage such as the crossbar 57, which is detachably secured to the side bars 35. Said crossbar is omitted from Fig. 4 because it is not necessary when the strip is provided with forms *x*, although it could be used with such a strip. As shown by Fig. 3, the front edge 58 of the crossbar occupies the same position relatively to the severing edge as that occupied by the front edge of the first form *x* in Fig. 4. Thus, if the end of a board be placed against the edge 58 preparatory to pressing the board downwardly upon the gummed strip, the board will be registered in the same position relatively to the strip as though it were registered as hereinbefore described with relation to a form *x*.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although without attempting to set forth all the forms in which it may be made or all the modes of its use, what I claim is:

1. The method of attaching paper, coated on one side with sticky material, to an article, which consists in laying an article against the sticky side of an elongated strip of said paper, moving the article to feed the paper to a severing device, moving the article to cause severing movement of the paper against said severing device, and moving said article against a wiper to wipe the severed portion of the paper against the article.

2. The method of attaching translucent paper, coated on one side with sticky material and having marks upon the other side, to an article, which consists in laying an article against the sticky side of an elongated strip of said paper, moving said article to feed said paper to a severing device, locally illuminating said other side of said paper to reveal said marks through the paper, severing the paper, and moving the article against a wiper to wipe the severed portion against the article.

3. The herein described method of covering an edge of a board with paper coated on one side with sticky material, which consists in laying a broad side of the board upon the sticky side of the paper so that the paper extends beyond the edge of the board, moving the board to feed the paper to a paper-severing device, moving the board to cause said severing device to sever the paper at a distance from the board, and moving the board against a wiper to wipe the free flap of paper over said edge and upon the opposite broad side of the board.

In testimony whereof I have affixed my signature, in presence of two witnesses.

GEORGE W. DINSMOOR.

Witnesses:
W. P. ABELL,
P. W. PEZZETTI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."