

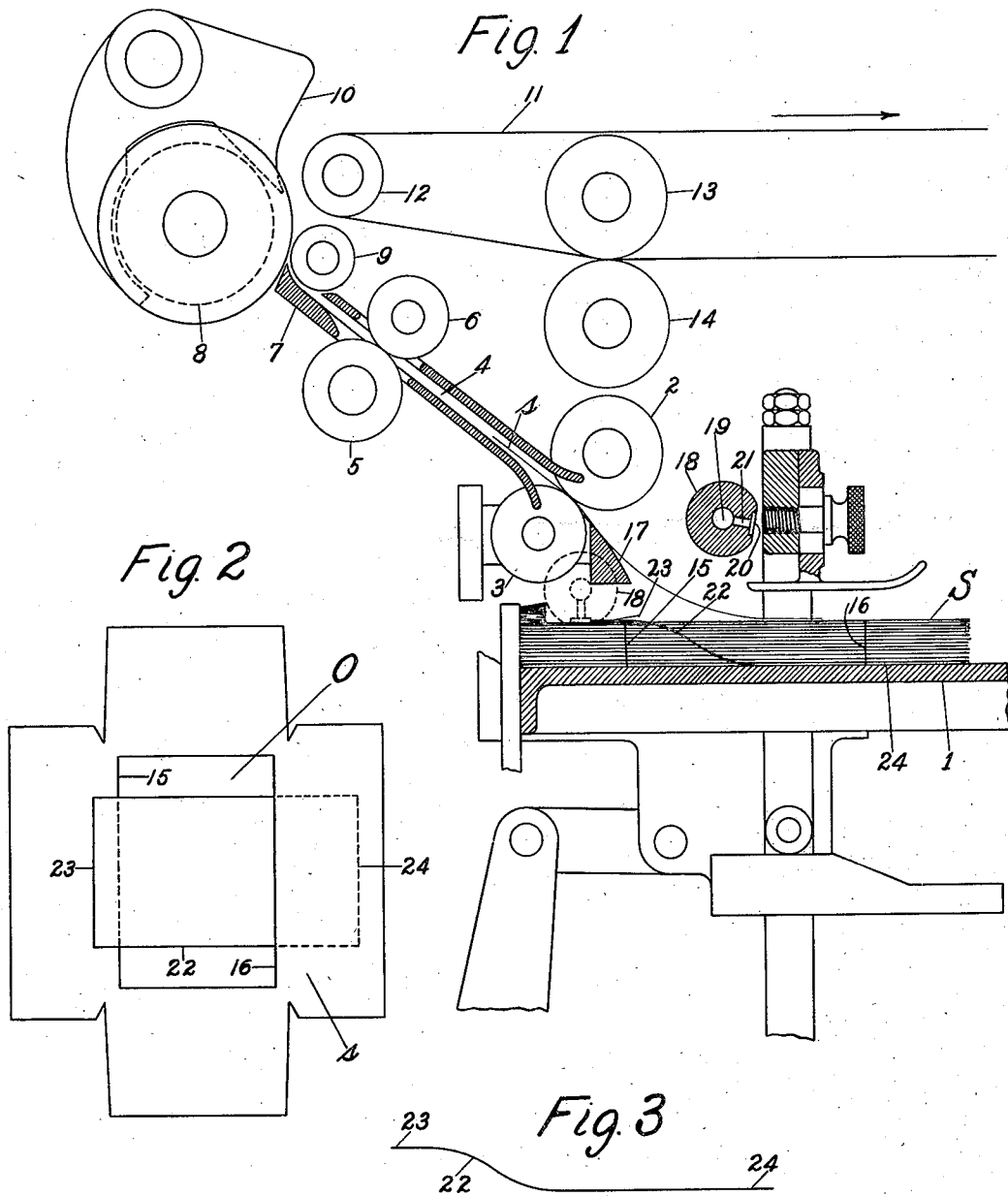
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STRUCTURE FOR FEEDING CUT-OUT SHEETS

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STRUCTURE FOR FEEDING CUT-OUT SHEETS.

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My invention relates to the method of and structure for feeding to any suitable destination, as an adhesive-applying machine, cut-out sheets or blanks, utilizable for any suitable purpose, as, for example, for wrapping or covering boxes.

Difficulty is encountered in feeding from a pile or stack sheets or blanks of paper or other material, a considerable portion of whose area lying within the outer edges or margins has been cut away or removed, forming openings or apertures whose extent is a considerable portion of the entire face area of the sheet or blank. An edge of the opening or cut-out is likely to catch upon the opposite cut-out edge of the pile or stack, particularly when the sheet is so limp or lacking in self-support as to become deformed during the operation of removal from the stack.

This difficulty is overcome in accordance with my invention, and more particularly when the sheets are withdrawn one by one from the top of the stack, by utilization of a guiding structure or member extending from beneath the stack to one side of the cut-out portion thereof into and upwardly through the cut-out portion and projecting beyond the forward or opposite edge of the cut-out in contact with the top of the stack.

My invention resides in the method and structure hereinafter described and claimed.

For an understanding of my method and for an illustration of my structure, reference is to be had to the accompanying drawing, in which:

Fig. 1 is a side elevational view, partly in vertical section, of apparatus embodying my invention.

Fig. 2 is a plan view of a stack and the associated guide member.

Fig. 3 is an edge view of the guide member.

Referring to the drawing, there is disposed upon the support or table 1 a pile or stack S of sheets, of paper or other material, to be fed or removed in succession from the stack and delivered by the feed rolls 2 and 3 into the guide passage 4 to the feed rolls 5 and 6, which pass the sheet on over the guide plate 7, between the glue-applying roll 8 and the roll 9 to position to be deflected by the stripper plates 10 on to the

conveyor belt 11, which passes over idler 12 and is driven by the rolls 13 and 14. As indicated in Fig. 2, the sheet s has cut out therefrom a considerable portion of its area within its edges or margins forming aperture or cut-out O. Cut-out sheets of this character in the stack S will present a forward or front cut-out wall 15 and the rear wall 16.

For picking a sheet from the stack and delivering it to the feed rolls 2 and 3 over the guide member or tongue 17, there is provided a suction roller 18, having the bore 19 continuously in communication with a vacuum pump, and having in the face thereof a cup or recess 20 in communication with the bore 19 through the passage 21 at which time the roll 3 and tongue 17 are in a position toward the left, Fig. 1, removed from above the stack S.

By suitable mechanism, not shown, the roller 18 is moved along with roll 3 and tongue 17 forwardly and backwardly and simultaneously to some extent rotated to perform its function of picking up from the stack S and delivering it as aforesaid, from tongue 17 to rolls 2 and 3. The movements of roll 3, tongue 17 and roller 18 may be effected by structure of the character disclosed in Nitsch and Baker application Serial No. 3,316, filed January 19, 1925.

The position of the roller 18 at the time of picking up a sheet is indicated in dotted lines. Upon application of suction, a sheet is drawn into contact with the roller 18, which in rotating wraps the sheet partially around itself, and by motion of translation of roller 18 delivers the sheet as aforesaid to the rolls 2 and 3. When the sheet is limp, or in any event insufficiently self-supporting, it will at the portion to the rear of the rear cut-out edge 16 sag or become otherwise deformed, and in further movement forwardly toward the left will, or is likely to, catch upon the forward wall 15 of the cut-out of the stack S.

To minimize or prevent this behavior on the part of the sheet undergoing withdrawal from the stack, there is provided a guide member 22, preferably of sheet material, preferably more or less stiff, though yielding or resilient. The sheet 22 may consist of metal, paper, or cardboard or equivalent. It may be said to comprise the upwardly

or inclined guiding portion 22, and the forwardly extending portion 23, adapted to lie upon the top of the stack to the front of the cut-out wall 15 thereof. It may, in addition, have the rearwardly extending portion 24 lying upon, held between the bottom of the stack S and the support 1, or secured to support 1 to the rear of the cut-out wall 16.

In withdrawing or feeding a sheet from the stack S as above described, as it advances from the right toward the left, the rear portion or flap thereof may sag into the opening O of the stack and the forward edge 16 of the sheet will eventually engage and ride up on the guide member 22 without catching upon the forward wall of the cut-out of the stack.

What I claim is:

1. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, and a sheet-like guide member of flexible material extending from within the cut-out of the stack over the forward upper edge thereof and resting upon the successive top sheets of the stack.

2. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, a sheet-like guide member of flexible material extending from within the cut-out of the stack over the forward upper edge thereof and resting upon the successive top sheets of the stack, and means for picking a sheet from the top of the stack and withdrawing it from beneath the forward portion of said guide member.

3. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, and a guide member extending forwardly from the rear of the rear bottom edge of the cut-out of the stack forwardly and upwardly therethrough from the forward upper edge thereof for guiding the rear edge of the cut-out of each sheet withdrawn from the stack.

4. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, and a guide member of flexible sheet material extending forwardly from the rear of the rear bottom edge of the cut-out of the stack forwardly and upwardly therethrough over the forward upper edge thereof for guiding the

rear edge of the cut-out of each sheet withdrawn from the stack.

5. Sheet-feeding mechanism comprising a support for a stack of cut-out sheets, a guide tongue, a guide member having a guiding surface extending from within the cut-out of the stack over the forward upper edge thereof, and means for applying suction to the top sheet of the stack and for delivering the forward portion of said sheet on to said guide tongue, the rear edge of the cut-out of said sheet during its withdrawal moving forwardly on said guide member.

6. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, and a guide member extending diagonally through the cut-out of the stack from the forward upper edge thereof toward a region substantially removed from the rear upper edge thereof for guiding the rear edge of the cut-out of each sheet withdrawn from the stack.

7. Sheet-feeding apparatus comprising a support for a stock of cut-out sheets, and a guide member resting on the top of the stack and extending diagonally through the cut-out thereof into engagement with said stack in a region substantially removed from the rear upper edge thereof for guiding the rear edge of the cut-out of each sheet withdrawn from the stack.

8. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, and a guide member normally resting on said support and extending through the cut-out of said stack into engagement with and overlying the topmost sheet thereof at the forward upper edge of the stack for guiding the rear edge of the cut-out of each sheet withdrawn from the stack.

9. Sheet-feeding apparatus comprising a support for a stack of cut-out sheets, and a guide member normally resting on said support beneath the stack at the rear bottom edge of the cut-out and extending forwardly and upwardly therethrough into engagement with and overlying the topmost sheet of the stack at the forward upper edge thereof for guiding the rear edge of the cut-out of each sheet withdrawn from the stack.

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