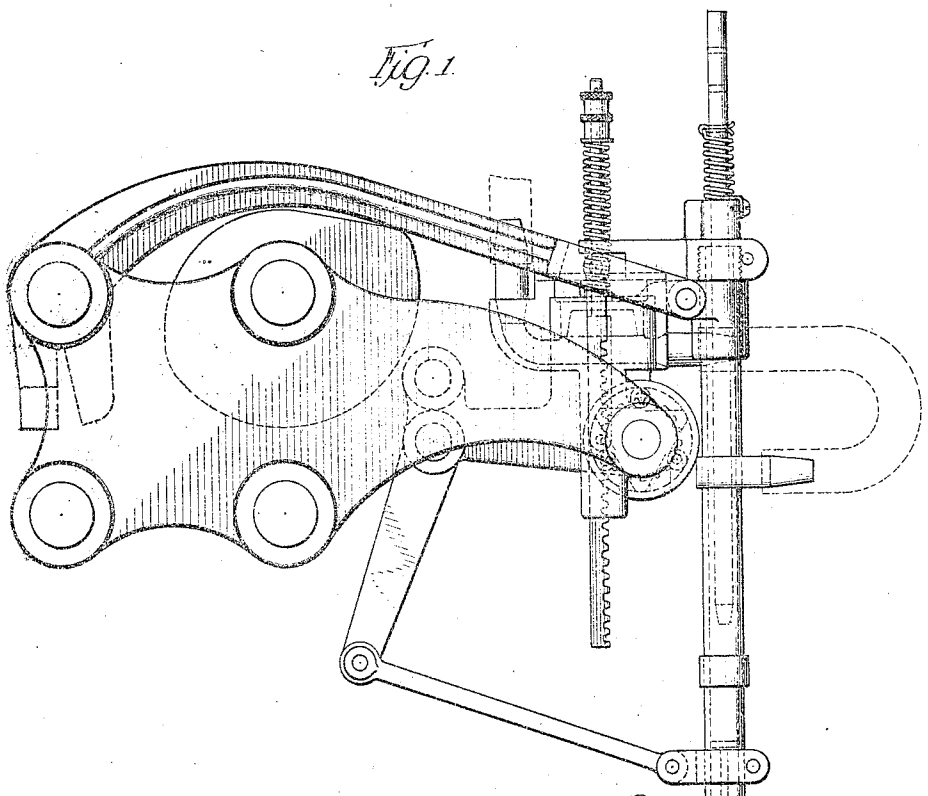
June 24, 1924. 1,498,965

C. HENDERSON

SHEET SEPARATING MEANS

Filed Feb. 1, 1922

Fig. 1.



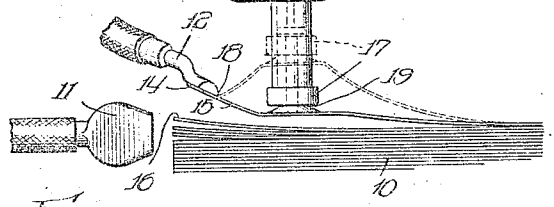
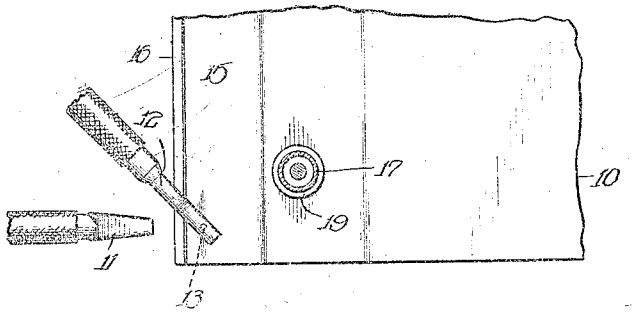


Fig. 2.



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Patented June 24, 1924. 1,498,965

UNITED STATES PATENT OFFICE.

CARL HENDERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO MIEHLE PRINTING PRESS & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SHEET-SEPARATING MEANS.

Application filed February 1, 1922. Serial No. 533,181.

To all whom it may concern:

Be it known that I, CARL HENDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheet-Separating Means, of which the following is a specification.

This invention relates to means for separating sheet material.

One object of the invention is to cause separation of one sheet from another in a pile in a simple and efficient manner whereby but a single sheet will be withdrawn at a time from said pile.

Another object is to provide improved means for causing separation of sheet material in a manner to meet the requirements for successful commercial use.

These and other objects are accomplished by means of the arrangement disclosed on the accompanying sheet of drawings, in which—

Figure 1 is a side elevation of sheet separating mechanism embodying my invention; and

Figure 2 is a fragmentary top plan view of the same arrangement.

The various novel features of my invention will be apparent from the following description and drawings and will be particularly pointed out in the appended claims.

Referring to the figures of the drawings, it will be noted that I have disclosed my invention in connection with a pile 10 of sheet material, the sheets of which are to be withdrawn one at a time.

At one side of the pile of sheet material there is provided a blower 11 of any suitable type, but preferably the same as that shown in my co-pending application, Serial Number 533,188, filed February 1, 1922. This blower directing its jets of air into the pile of sheet material "fluffs" the pile, causing a preliminary separation between the sheets near the top of the pile. A hollow suction foot 12 is provided which, as here shown, operates at the corner of the pile and is provided in this instance with but a single suction opening 13 in the straight but inclined lower wall 14 of the suction foot 12. The suction exerted through the foot 12 is sufficiently great so that the top sheet 15 of the pile when blown upwardly during the "fluffing" action is drawn to and held by the suction foot 12. The lower wall 14 of the suction foot 12 is preferably inclined to the top surface of the pile to increase the separation of the top sheet 15 from the second sheet 16 at the corner portion as shown. Immediately after the top sheet 15 is attracted to and held by the suction foot 12, a second suction means 17 passes downwardly into engagement with the top sheet 15 and immediately moves upwardly drawing said top sheet 15 further away from the pile and drawing said top sheet across the lower edge 18 of the suction foot 12, causing said top sheet to flex, as indicated in dotted lines in Figure 1 of the drawings. In thus causing this top sheet to flex, a second sheet, if it has adhered to the top sheet will be caused to separate from said top sheet, thereby insuring complete separation.

By means of this combination of elements the separation of the top sheet from the second sheet is insured, for the blower 11 "fluffing" the pile causes a preliminary separation of the top sheet from the second, the suction foot 12 increases the separation and the third suction means 17 increases still further the separation and positively insures the separation of the second sheet from the first if the second sheet has adhered somewhat to the first sheet up to this point.

The mechanism for operating the suction means 17 will not be described, as such is fully disclosed in applicant's co-pending application, Serial Number 533,184, filed February 1, 1922, suffice it to say that suitable mechanism is provided for reciprocating the suction means 17 in a vertical direction and that the suction means 17 discontinues its downward movement as soon as its suction shoe 19 engages the top sheet of paper 15 to prevent said top sheet from being forced back into engagement with the second sheet.

By means of this arrangement sheet material in a pile is separated in a manner to meet the requirements for successful commercial use.

It is my intention to cover all modifications falling within the spirit and scope of the following claims.

I claim:

1. In sheet separating mechanism, the combination of means for "fluffing" a pile of sheet material, means for drawing the top sheet away from the second sheet and hold-

ing said top sheet without passing into engagement with the pile, and suction means for drawing said top sheet further away from the second sheet and away from said first drawing means, causing said top sheet to be flexed to assist in its separation from the second sheet if the latter has adhered to the top sheet.

2. In sheet separating mechanism, the combination of a blower for "fluffing" a pile of sheet material, a suction foot for drawing the top sheet away from the second sheet and holding said top sheet, and suction means for drawing said top sheet further away from the second sheet and away from said suction foot, causing said top sheet to be flexed to assist in its separation from the second sheet if the latter has adhered to the top sheet.

3. In sheet separating mechanism, the combination of means for "fluffing" a pile of sheet material, a suction foot for drawing said top sheet away from the second sheet and holding said top sheet, said suction foot having its bottom portion inclined with respect to the top surface of the pile for increasing the distance between the top and second sheets, and means for drawing said top sheet further away from the second sheet and away from said suction foot, causing said top sheet to be flexed to assist in its separation from the second sheet if the latter has adhered to the top sheet.

4. In sheet separating mechanism, the combination of means for "fluffing" a pile of sheet material, and a plurality of suction members which operate on the top sheet for separating it from the second sheet, said suction members acting in succession and one of said suction members withdrawing said top sheet from another of said suction members preparatory to the sheet being completely withdrawn from the pile.

Signed at Chicago, Illinois, this 28th day of December, 1921.

CARL HENDERSON.