May 26, 1925. 1,539,083

C. HENDERSON

SHEET SEPARATING MEANS

Filed Feb. 1, 1922

Fig. 1.

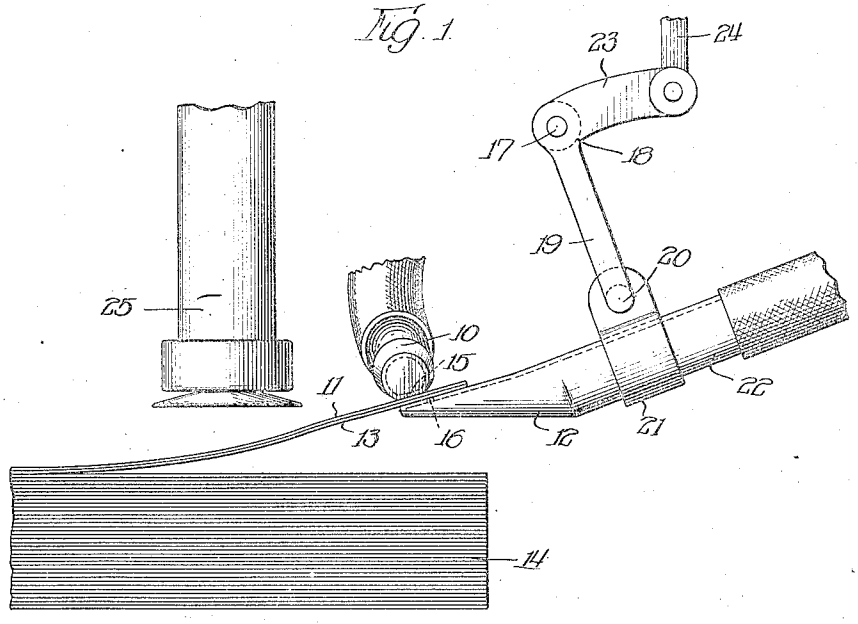
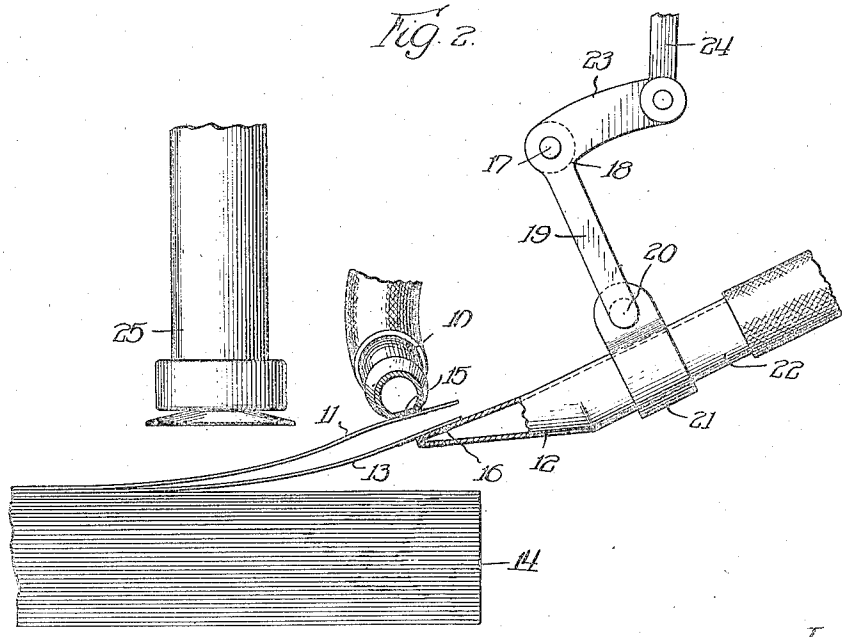


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SHEET-SEPARATING MEANS.

Application filed February 1, 1922. Serial No. 533,183.

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 sheet separating means.

In the operation of printing presses it is not uncommon for more than one sheet to be taken from a pile at a time. Many devices have been employed for preventing more than one sheet being withdrawn from a pile at a time. The present invention has to do primarily with separating a second sheet from the first sheet if more than one sheet has been withdrawn at a time from the pile.

One object of the invention is to provide simple and efficient means for separating sheet material from the pile in a manner such that if more than one sheet is withdrawn at any one time from the pile the second sheet will be separated from the first in a manner to meet all the requirements for successful commercial use.

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

Figure 1 is a side elevational view of my sheet separating means showing a double suction arrangement whereby the second sheet is separated from the first sheet when more than one sheet has been withdrawn from the pile; and

Figure 2 is a similar view showing the second sheet actually separated from the first sheet under the conditions hereinabove mentioned.

The various novel features 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 this particular embodiment of my invention includes two separate suction devices, one suction device 10 acting directly on top of the top sheet 11 and the second suction device 12 acting directly on the underside of a second sheet 13 when more than one sheet has been raised from the pile 14. The suction device 10 is in the form of a nozzle having openings 15 through which air is drawn inwardly for withdrawing sheet material from the pile 14. As mentioned hereinabove, sometimes more than one sheet is withdrawn from the pile at a time. To separate the second sheet from the first sheet, air is drawn through openings 16 in the suction device 12.

As shown in Figure 1, the suction device 12 occupies a position within the vertical confines of the pile. Such a position is permitted by a pivotal swinging movement of the nozzle 12 about the center 17 of a bell crank lever 18, one arm 19 of which is pivotally connected at 20 to a clamp 21 surrounding the nozzle pipe 22 of the suction device 12, the other arm 23 of the bell crank lever receiving its motion from any suitable cam or other device, not shown, through a link 24.

As the first suction device 10 moves upwardly with one or more sheets the second suction device 12 is moved inwardly into the position shown in Figure 1, in which position said second suction device acts directly upon the underside of the second sheet 13. Upon continued operation of the press the second suction device 12 is then moved downwardly and outwardly as shown in Figure 2, withdrawing the second sheet from the first sheet before the first or top sheet 11 is entirely withdrawn from the pile preparatory to receiving an impression. Suction is cut off the second device 12 at the proper time to prevent dislodgment of the second sheet on the pile. Other paper separating means 25 is shown which may be used as an auxiliary device for bodily raising the single sheet from the pile.

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

I claim:

1. In sheet separating mechanism, the combination of means for separating a sheet of material from a pile, means acting directly upon a second sheet for withdrawing it from a first sheet if more than one sheet is separated at a time from the pile, and juxtaposed auxiliary means for bodily raising the top separated sheet from the pile.

2. In sheet separating mechanism, the combination of a plurality of sheet separating members for acting upon two adjacent

sheets of paper whereby one is separated from the other, and juxtaposed auxiliary means for bodily raising the top separated sheet from the pile.

3. In sheet separating mechanism, the combination of two suction devices operable in opposite directions upon two sheets of paper for separating same, and adjacent auxiliary suction means for bodily lifting the top separated sheet from the pile.

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

CARL HENDERSON.