

1,334,451.

C. S. HANAU, DEC'D.
D. G. HANAU, EXECUTRIX.
PAPER FEEDING MACHINE.
APPLICATION FILED MAY 23, 1919.

Patented Mar. 23, 1920.

Fig. 1.

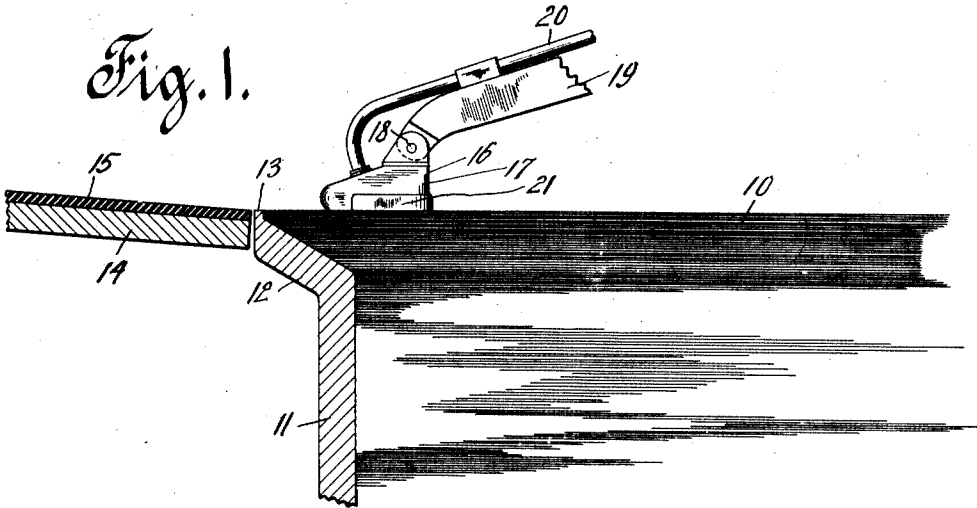


Fig. 2.

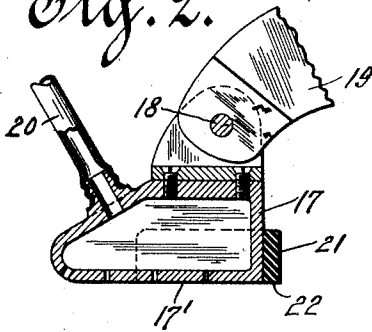


Fig. 3.

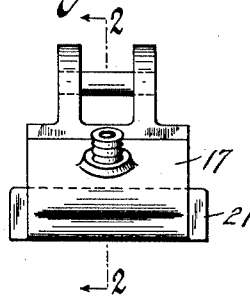


Fig. 4.

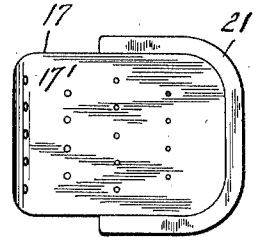


Fig. 5.

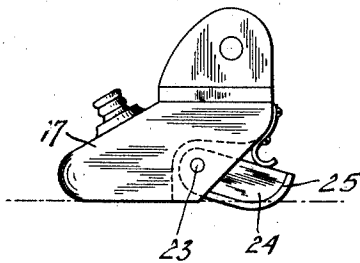


Fig. 6.

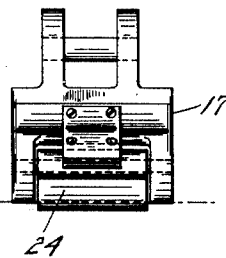
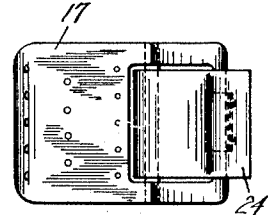


Fig. 7.



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CARL S. HANAU, DECEASED, LATE OF NEW YORK, N. Y., BY DOROTHY G. HANAU,
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PAPER-FEEDING MACHINE.

1,334,451.

Specification of Letters Patent.

Patented Mar. 23, 1920.

Original application filed May 18, 1918, Serial No. 235,412. Divided and this application filed May 23, 1919.
Serial No. 299,283.

To all whom it may concern:

Be it known that CARL S. HANAU, deceased, late of the city of New York, in the county of Bronx and State of New York, has invented certain new and useful Improvements in Paper-Feeding Machines, of which the following is a specification, the same being a division of application for Letters Patent for improvements in paper feeding machines, Serial No. 235,412, filed May 18, 1918.

The present invention relates to paper feeding machines for printing presses, ruling machines and the like, for feeding, in regular order of succession, sheets from a pile or stack of paper, which is suitably arranged on a table in proximity of the apparatus. The invention pertains more particularly to pneumatic feeders and separators.

The main object of the invention is to produce a pneumatic device, provided with means that, in coöperation with stationary friction strips, prevents more than one sheet from being carried forward to the conveying mechanism of the machine.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

Two of the many possible embodiments of the invention are illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a pneumatic feeding device, constructed in accordance with the present invention, part of the paper feeding machine being shown in section; Fig. 2 is a longitudinal vertical section taken through the feeder; Fig. 3 is a front elevation thereof; Fig. 4 is a bottom plan view of the same; Fig. 5 is a side elevation of a modified feeder; Fig. 6 is a rear elevation thereof; and Fig. 7 is a bottom plan view of the same.

Referring now first to Figs. 1 to 4, inclusive, of the drawings, the numeral 10 indicates a pile or stack of paper, supported by a table, not shown. This table is automatically raised, for bringing the top sheet into position for separating, by means herein not referred to, as the same does not form part of the present invention. The stack of paper is guided in its upward movement by a transverse frame 11, having at its upper end a forwardly inclined lip 12, provided at its free end with an upwardly projecting ledge 13. In front of this ledge are mounted shelves 14, which constitute, as will hereinafter appear, the lower and stationary members of the separating device. The upper faces of these shelves are provided each with a friction strip 15, preferably made of rubber. The rear edges of the friction strips 15 are disposed substantially flush with the ledge 13, their front edges being somewhat higher.

With each shelf coöperates a suction device 16, comprising a casing 17, having a flat perforated under face 17', that is adapted to rest upon the top sheet of the pile, said casing being pivoted at 18 to a lever 19, the latter being attached to a mechanism that actuates the casing in a manner hereinafter to be described. The casing communicates through a, preferably, flexible hose 20 with a suction device (not shown), and is provided at its sides and rear with a friction body 21, the lower edge 22 of which is disposed in the plane of the underface of the bottom of the casing.

The operation of this device is as follows:—When the suction casings are in their outermost positions, they are brought into engagement with the top sheet of the pile and moved toward the ledge 13. Due to the fact that the friction bodies 21 are in engagement with the top sheet, a few sheets on top of the pile are "combed", the top sheet being stopped in its forward movement by the ledge 13 on the lip 12. When the forward edges of the suction casings reach the ledge 13, they are slightly raised, a vacuum being created in the same by the suction mechanism immediately before the raising operation, with the result that the top sheet is elevated slightly above the plane of the ledge 13. The vacuum is maintained during the remainder of the forward stroke

of the suction casings, which carry thus the top sheet within the reach of the conveying means of the machine. The friction bodies 21 coöperate with the friction strips 15 on the shelves 14, separating the sheets, if by accident more than one sheet has been carried forward. When the suction casings have reached their foremost positions, the top sheet is within the reach of the conveying means, and, as soon as this last-mentioned means engages the sheet, the suction mechanism ceases to operate, so that the suction casings release the sheet of paper. After this, the suction casings are elevated and kept in raised position until they reach their rear positions, when the said casings are again moved into contact with the stack of paper.

From the foregoing it appears that the suction casings serve not only as the means for advancing the top sheet to the conveying mechanism of the machine, but also as a combing device and, in coöperation with the friction strips 15, as separating means.

The modification shown in Figs. 5 to 7, inclusive, of the drawings, differs from the construction above referred to in that the casing 17 has pivoted thereto at 23 a spring-pressed shoe 24, which projects in rear of the casing and is covered at its lower surface with a friction strip 25. This shoe is

adapted to project below the plane of the bottom of the casing, the spring associated with the same causing its friction strip to be more effective than the friction body 21 of the device shown in Figs. 1 to 4, inclusive.

What I claim is:—

1. A sheet-separating mechanism, including a hollow body provided with perforations in its underface, and a friction member shiftably disposed thereon having its acting face substantially in the plane of said perforations.

2. A sheet-separating mechanism, including a hollow body provided with perforations in its underface, and a friction member pivoted thereto having its acting face substantially in the plane of said perforations.

3. In a sheet-separating mechanism according to claim 1, said friction member being spring-pressed.

4. In a sheet-separating mechanism according to claim 2, said friction member being spring-pressed.

Signed at New York, in the county of New York and State of New York, this 15th day of May, A. D. 1919.

DOROTHY G. HANAU,
Executrix of the last will and testament of
Carl S. Hanau.