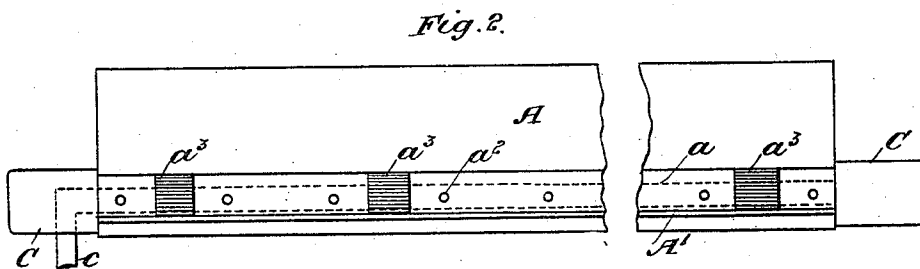
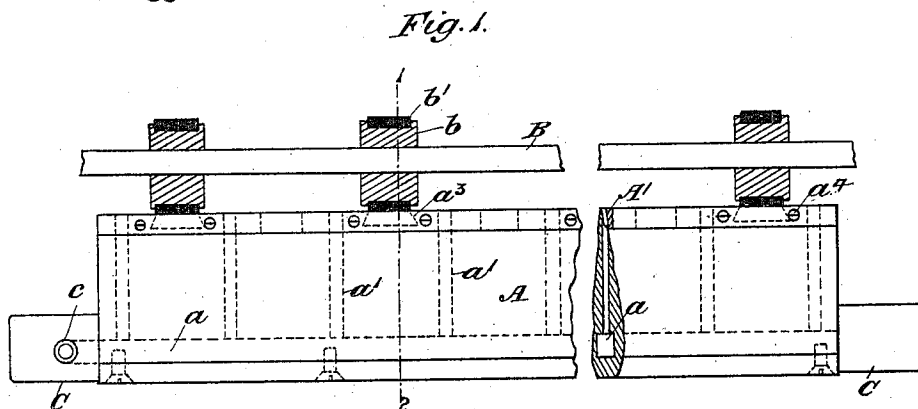
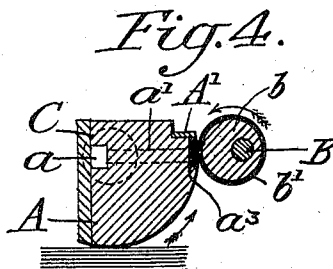
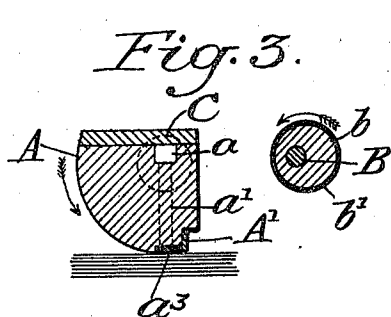


H. HOLLINGS.
 AUTOMATIC SHEET SEPARATOR FOR VACUUM PICKING UP ROLLERS.
 APPLICATION FILED MAY 24, 1910.

1,045,551.

Patented Nov. 26, 1912.



Witnesses
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UNITED STATES PATENT OFFICE.

HARRY HOLLINGS, OF ROSE VIEW, CURRIE, SCOTLAND.

AUTOMATIC SHEET-SEPARATOR FOR VACUUM PICKING-UP ROLLERS.

1,045,551.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed May 24, 1910. Serial No. 563,175.

To all whom it may concern:

Be it known that I, HARRY HOLLINGS, a subject of the King of the United Kingdom of Great Britain and Ireland, and resident of Rose View, Currie, Midlothian, Scotland, have invented new and useful Improvements in Automatic Sheet-Separators for Vacuum Picking-Up Rollers, of which the following is the specification.

This invention relates to means for effecting the separation of one sheet from another, in that type of machine which is employed for the purpose of feeding single sheets to printing and folding machines and the like.

My improvements only refer to those parts of a separating device (usually used as an adjunct to a printing or like machine) which actually effect the picking up of sheets of paper from a table and the controlling of the passage of the sheets to the printing machine so that only one sheet at a time is fed forward.

To this end my improvements comprise a revolubly mounted suction roller having rubber on its face, and having a central cavity in which a vacuum is set up and with right angle passages from the cavity to the periphery of the roller; and revolubly mounted disks having rubber on their faces; said suction roller and disks being adapted to rotate in the same direction.

Figure 1 is a plan view of the device as positioned in Fig. 4, with the separators shown in section, the roller having been broken in its length; Fig. 2, a bottom plan view of the vacuum roller as positioned in Fig. 3; Fig. 3, a sectional elevation of the vacuum roller and separator; the relative positions being that when the vacuum roller is just going to pick up a sheet; Fig. 4 shows a similar view to Fig. 3, but in this case the vacuum roller and separator are shown relatively positioned when the separator will perform the function of separating excess sheets.

A is the roller of the segmental shape as shown in Fig. 3 with the air chamber a having the channels a^1 terminating in suction holes a^2 , Fig. 2.

B is a shaft for carrying the separators b and in accordance with my improvements I provide on the face or periphery of the vacuum segmental picking up roller, rubber a^3 which is dovetailed into the face of the roller A, at intervals; being held in position by the covering plate A^1 secured by set

screws a^4 . The rubbers a^3 of the roller A are shown so that they miss the suction holes a^2 . Working in combination with the said vacuum picking up roller I may mount the separators b in an eccentric manner on the shaft B and I cover the face of the said separators with the rubber b^1 . To the separators b , is imparted a motion of rotation; and the object of the separators being eccentric is so that after they have brushed the second or other number of sheets from the vacuum picking up roller they leave the face of the said roller, that is to say provide a gap for the easy passage of the sheet (to be fed) to the printing machine.

By reason of providing the vacuum picking up roller with rubber on the face and using in combination therewith separators such as described, I find that owing to the frictional contact of the surface of the sheet engaging with the picking up roller that the resistance is sufficient to prevent the sheet being stroked off the picking up roller by the separators; but that the frictional contact between the sheets (if two or more are picked up at a time) is not sufficient to prevent the spare sheets from being readily removed by the separators.

It is to be understood that during the operation of separating any surplus sheets from the vacuum picking up rotatable roller the suction is causing the sheet (to be fed forward) to adhere firmly to the picking up roller.

In the roller shown, C are the journals thereof and c is the tube communicating with a pump for creating a vacuum.

Claim.

In devices for separating sheets of paper, the combination with a rotatable segmental roller; of a series of cylindrical rotating disks, a common shaft for said rotating disks upon which the disks are eccentrically mounted, rubber facing on the cylindrical surface of said disks; an interior vacuum cavity extending the whole length of and situated near the axis of rotation of said segmental roller; a series of channels radiating from said cavity to the cylindrical surface of said segmental roller, all the channels being situated in the same axial plane; a series of rubber insertions in the cylindrical surface of the segmental roller in line with and between the external openings of said channels; the relative position of said segmental roller and said disks being such

that their axes of rotation are parallel, each disk situated opposite a rubber insertion in the roller so as to touch said insertion when said channels during the rotation are pointing in the direction of the axis of said disks; the adjoining surfaces of the segmental roller and the disks moving in opposite directions, whereby a sheet will be picked up by said segmental roller through the suction in the channels in passing over a pile and carried upward, any surplus sheet adhering to the separated sheet being scraped off by the disks, said disks thereupon receding to permit the separated sheet to pass between said segmental roller and said disks.

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