

No. 616,043.

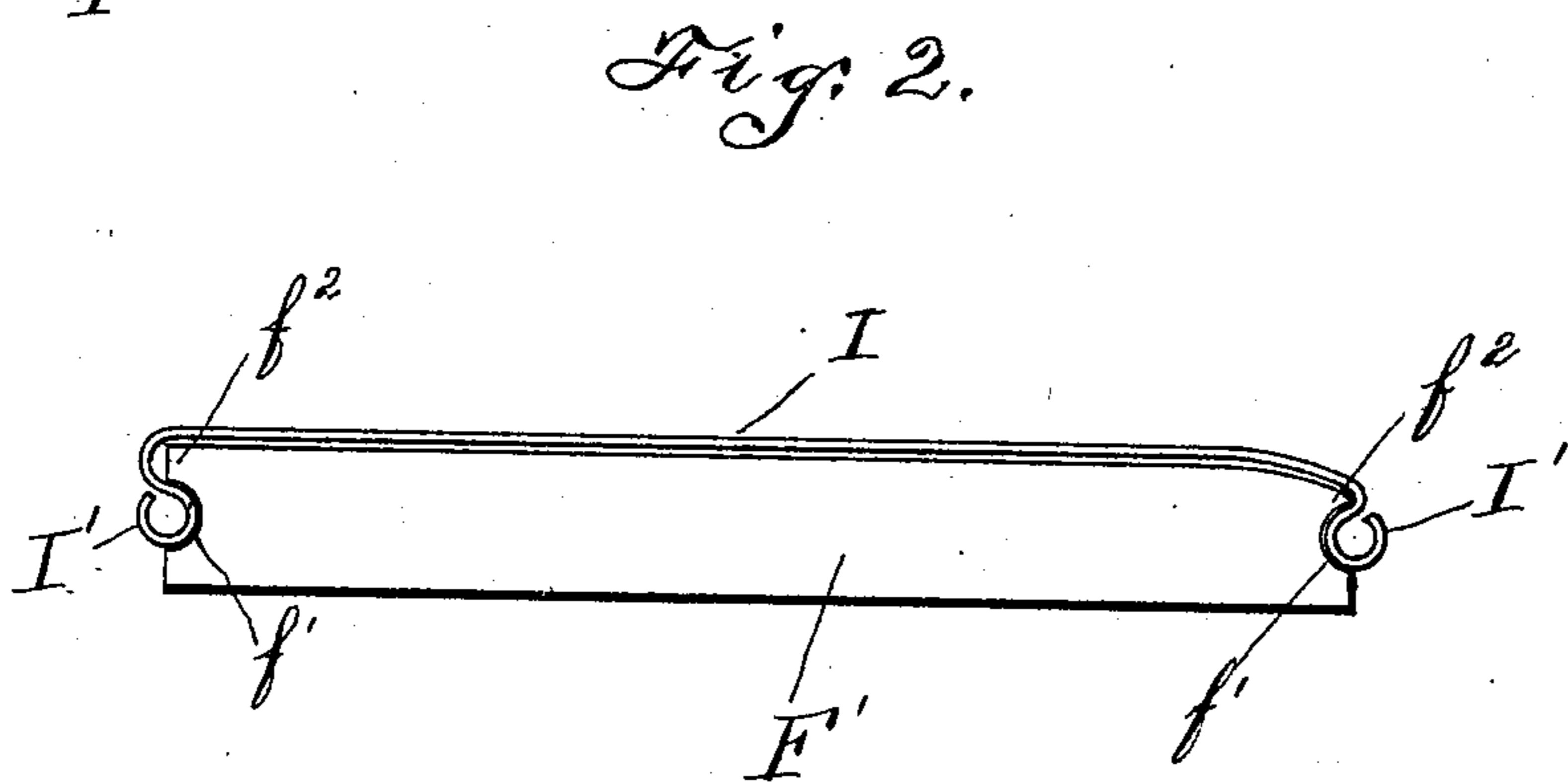
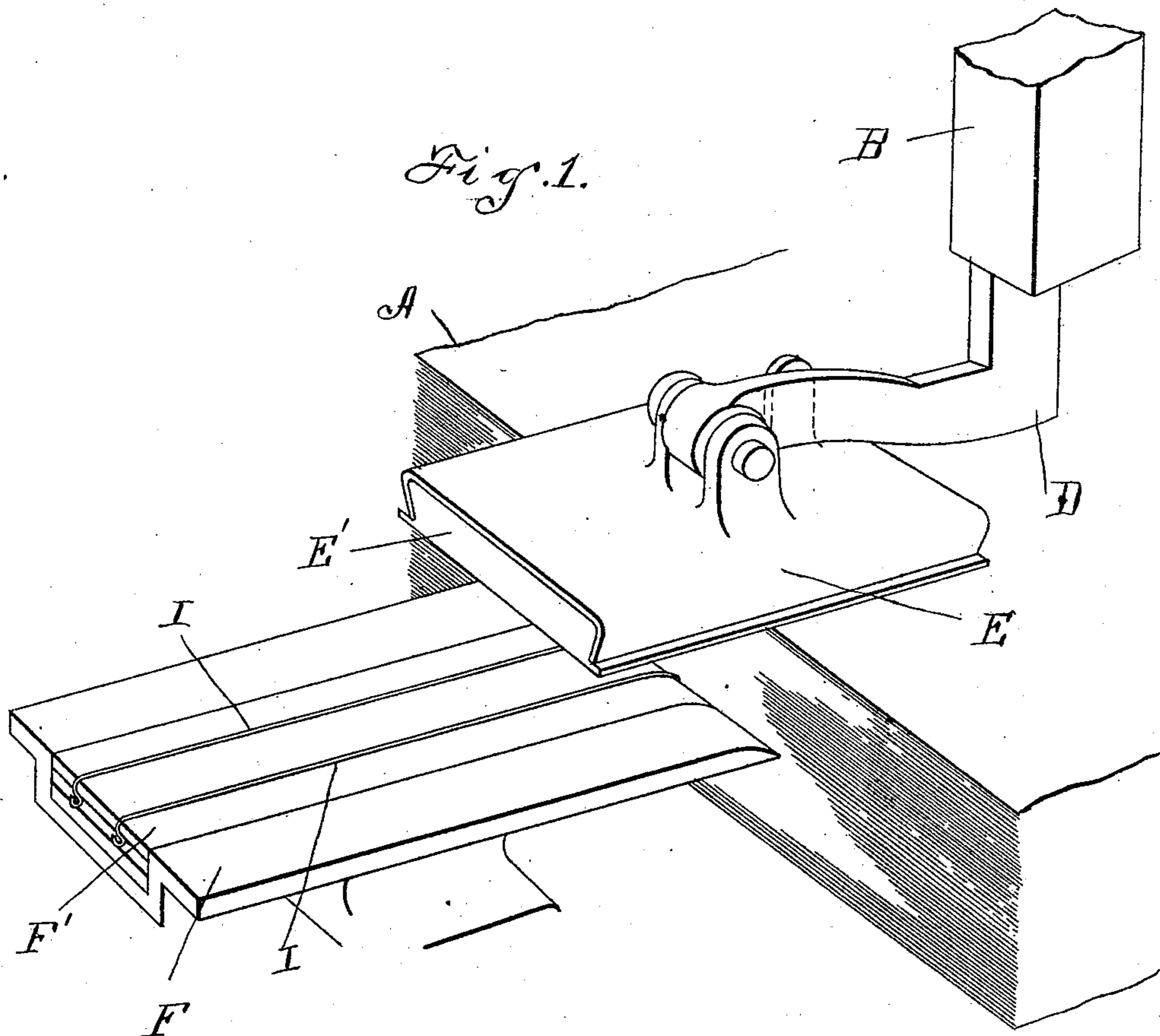
Patented Dec. 13, 1898.

J. C. WILLETTS.

SHEET SEPARATING DEVICE FOR PAPER FEEDING MACHINES.

(Application filed Dec. 14, 1897.)

(No Model.)



WITNESSES:

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JOSEPH C. WILLETTS, OF NEW YORK, N. Y., ASSIGNOR TO TALBOT C. DEXTER, OF PEARL RIVER, NEW YORK.

SHEET-SEPARATING DEVICE FOR PAPER-FEEDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 616,043, dated December 13, 1898.

Application filed December 14, 1897. Serial No. 661,805. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. WILLETTS, a citizen of the United States, residing at New York, county and State of New York, have
5 invented certain new and useful Improvements in Sheet-Separating Devices for Feeding-Machines, of which the following specification, taken in connection with the accompanying drawings, is a full, clear, and exact
10 description.

My invention relates to improvements in the sheet-separating devices for feeding-machines invented by James J. Parker and covered by an application filed by him June 8,
15 1897, Serial No. 639,983. The Parker device is an improved form of frictional sheet-separating device adapted to be applied to a paper-feeding machine for insuring the delivery of single sheets from the machine. The separating or sheet-retarding member of the
20 Parker device is formed of a block or pad of soft rubber having lines or strips of material of less frictional capacity traversing across or through its working surface in the direction of feed, said strips or lines of material
25 being preferably of metal. Coöperating with the sheet-retarding member is a reciprocating feeding member of soft rubber which is adapted to pass the successive upper sheets of a
30 pile over the separating member. The main utility in the Parker device consists in providing a frictional resistance for the sheet-retarding bed which will be sufficient to overcome the adhesion between two sheets, but
35 which will be enough inferior to the frictional capacity of the feeding member to avoid the objectionable holdback of the upper sheet.

My invention consists of a sheet-retarding bed of any suitable material having variable
40 lines or strips of inferior frictional material traversing the retarding-bed in the direction of feed and adjustable transversely of the direction of feed, in combination with a suitable frictional feed-pad. Any suitable means may
45 be employed for securing the lines or strips of inferior frictional material in adjusted position upon the surface of the retarding-bed.

I prefer to form the retarding-bed with recesses or shoulders at its ends and the lines
50 or strips of inferior frictional material of wires

or rods having their ends bent to form spring locking-shoulders adapted to engage the recesses or shoulders of the retarding-bed, but said rods may be of other material differently
55 formed and secured. Any number of wires or rods may be applied to the surface of the separating-bed, according to the amount of frictional resistance required, and their position transversely of the bed may be arranged
60 to accomplish the best results.

In order that my invention may be fully understood, I will first describe the same with reference to the accompanying drawings and afterward point out the novelty with more
65 particularity in the annexed claims.

In said drawings, Figure 1 is a front perspective view of a pair of sheet separating and feeding devices having my invention applied thereto. Fig. 2 is a side elevation of
70 the rubber separating-block removed from its metal support.

For the purpose of illustrating my invention I have represented it applied to the sheet feeding and separating devices described in
75 an application filed by Talbot C. Dexter December 28, 1896, Serial No. 617,263, for improvements in paper-feeding machines.

B represents a portion of a reciprocating carriage adapted to travel upon a track (not shown) and have motion imparted to it by any
80 suitable mechanism.

D is a vertically-movable arm mounted in the carriage B and adapted to be moved to and from the plane of feed of the sheets
85 at the beginning and ending of its strokes, said mechanism being of any suitable construction.

A represents the forward edge of a pile of sheets adapted to be supported upon an adjustable platform or table, which is not shown.
90

E represents the upper reciprocating feeding member of the sheet-separator, comprising, as illustrated, a metal backing, within which is secured a block or pad or soft rubber E'.
95

F is a metal casing or bracket, within which is supported a block or pad of soft rubber F', the casing F being mounted at the delivery end of the paper-feeding machine and adjacent to the forward edge of the pile of sheets A.
100

F and F' constitute one of the lower separating or sheet-retarding members, two of which are preferably employed at the delivery end of each feeding-machine.

5 My invention consists in providing the retarding block or bed F' with rods, wires, or strips of an inferior frictional material I, preferably metal, which are removable, variable, and adjustable transversely of the line of feed
10 of the sheets. I prefer to form the rods or wires I with the bent spring ends I', which are adapted to fit in transverse recesses f' over the shoulders f^2 of the retarding-pads F'. It will be observed that the rods or wires I,
15 extending longitudinally of the direction of feed, can readily be adjusted transversely of the retarding rubber pads.

It will be observed that by reason of the rods or wires I extending longitudinally over
20 the surface of the rubber separator-pads the friction of the lower separator-pad will be sufficiently greater than the frictional adhesion between two sheets to hold back the under sheet or sheets which may by chance follow
25 the top sheets from the pile under the action of the feeding member E E', but that the friction of said lower separator member will be sufficiently inferior to the friction of the upper feeding member to avoid interference with
30 the passage of the successive top sheets singly from the machine.

The variability of the wires or rods I transversely of the separator-pads is important, because it enables the operator to regulate to
35 a nicety the relative frictional resistance between the upper and lower feeding and separating members. This adjustment is important because different qualities and sizes of paper sheets present widely-different difficulties to overcome, particularly under vary-
40 ing atmospheric conditions, and therefore everytime a different kind of paper is placed in the machine it is necessary to adjust the parts of the feeder and separator to operate
45 properly upon the particular kind of paper.

Though I have shown but one form of device for adjustably securing the rods or strips of inferior frictional material upon the surface of the retarding-bed, I would have it understood that various equivalent forms of de-
50 vices—such as set-screws and tie-rods, for instance—may be employed for accomplishing

the same result without departing from the spirit of my invention.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A separator for paper-feeding machines comprising a sheet-retarding bed, portions adjustable upon the retarding-surface of said bed for regulating the frictional resistance thereof and a movable frictional pad cooperating therewith, substantially as set forth.

2. A separator for paper-feeding machines comprising a sheet-retarding bed having its surface traversed approximately in the line of feed by strips, rods or wires of metal or other material of inferior frictional quality, which strips, rods, or wires are adjustable upon the surface of said retarding-bed transversely of the line of feed, and a movable frictional feed-pad cooperating therewith, substantially as set forth.

3. In a separator for paper-feeding machines, a retarding-bed of rubber in combination with rods or wires of metal traversing its surface approximately in the direction of feed and having means for adjusting them transversely of the line of feed, substantially as set forth.

4. In a separator for paper-feeding machines, a retarding-bed of rubber, in combination with rods or wires of metal traversing its surface in the direction of feed and adjustable transversely of the direction of feed, and suitable means for securing said rods or wires in adjusted position, substantially as set forth.

5. In a paper-separating device for paper-feeding machines, the combination of a bed of rubber formed with recesses or shoulders at its ends, rods or wires extending across the surface of said bed of rubber approximately in the direction of feed of the sheets and having their ends bent to form spring-shoulders which engage the recesses or shoulders of the bed of rubber, and a movable rubber feed-pad cooperating therewith, substantially as set forth.

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Witnesses:

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