

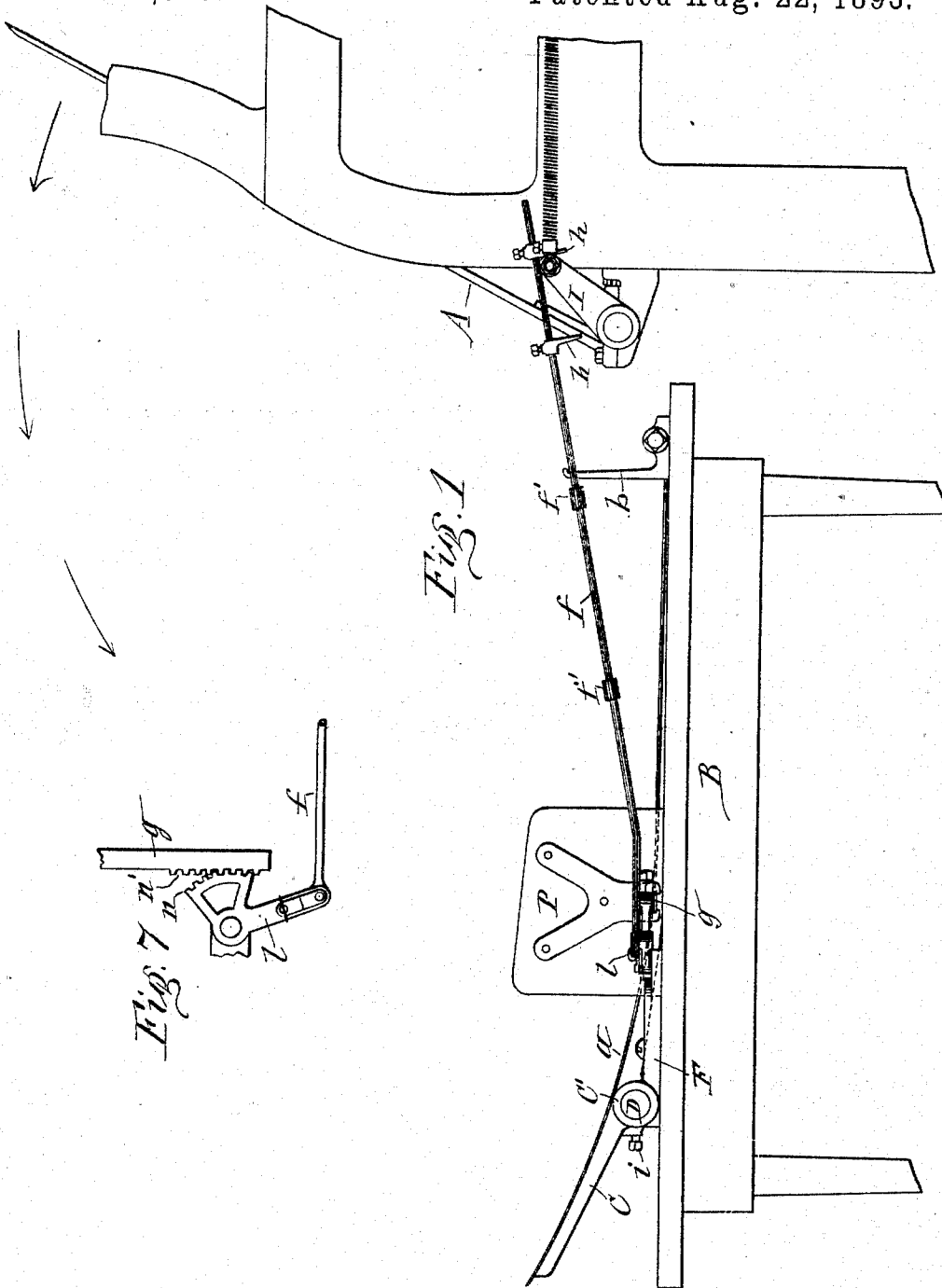
(No Model.)

5 Sheets—Sheet 1.

T. A. BRIGGS.
DEVICE FOR PILING PAPER.

No. 503,576.

Patented Aug. 22, 1893.



Witnesses:
C. L. Burdison
H. M. Seaman

Inventor:
Thomas A. Briggs
By Bull, Laessle & Bull
his Attorneys

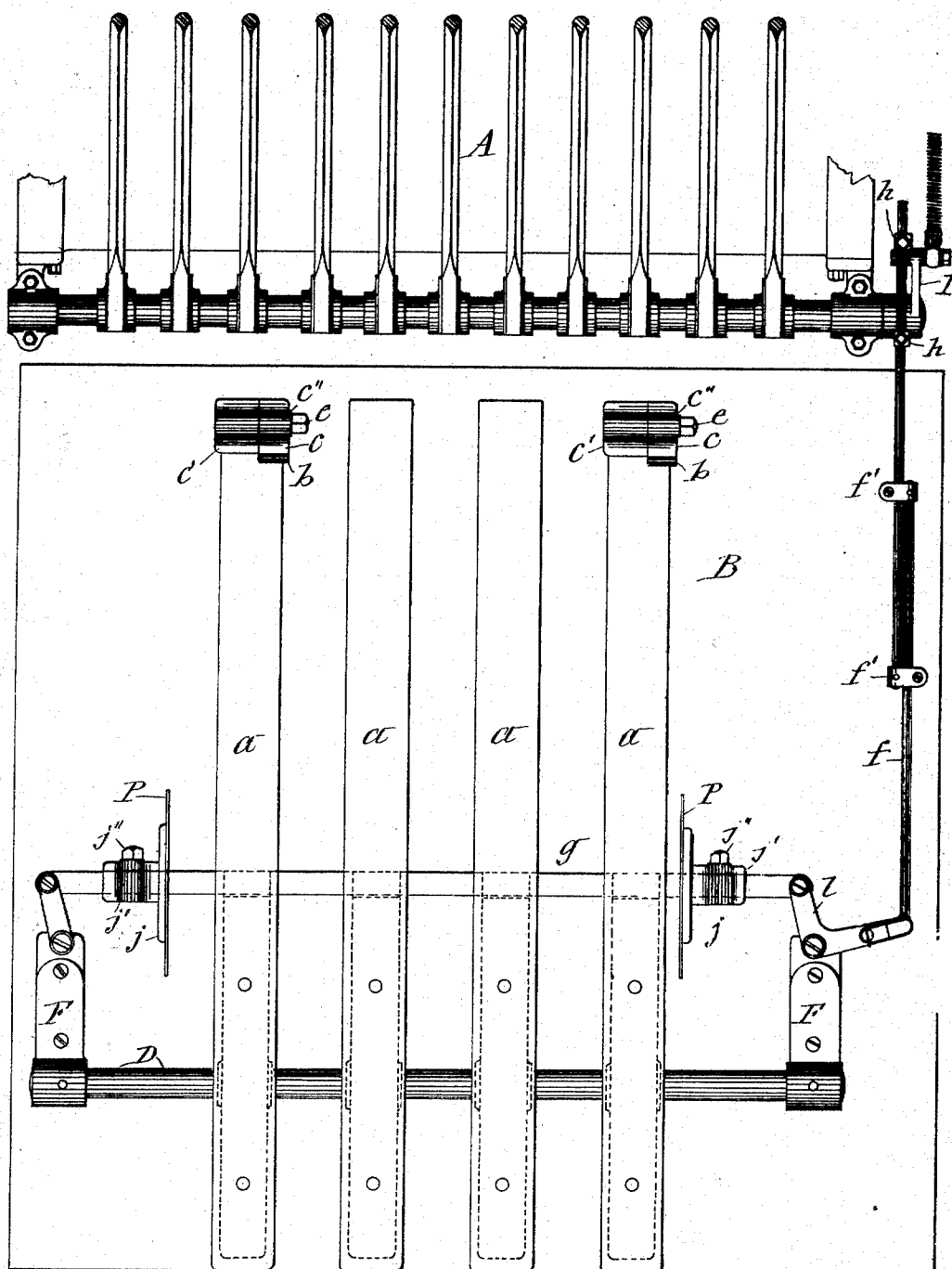
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Fig. 2

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(No Model.)

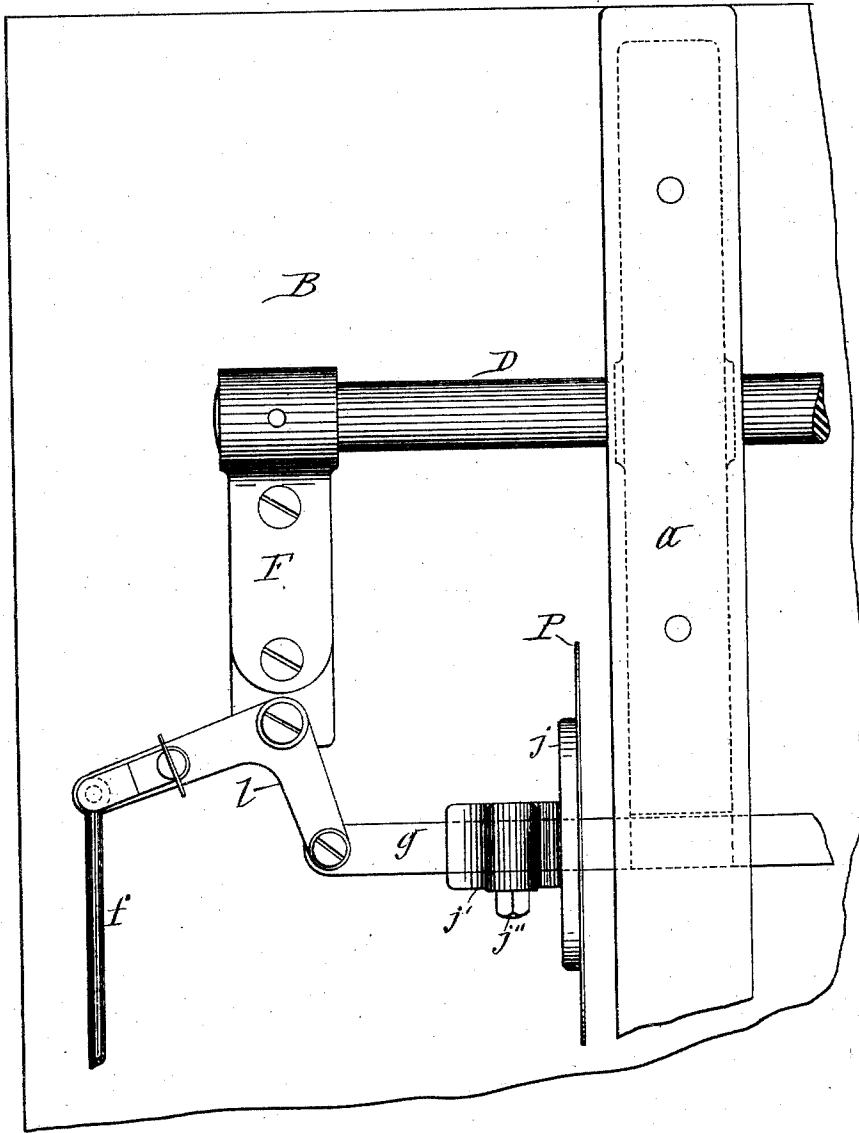
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Fig. 3



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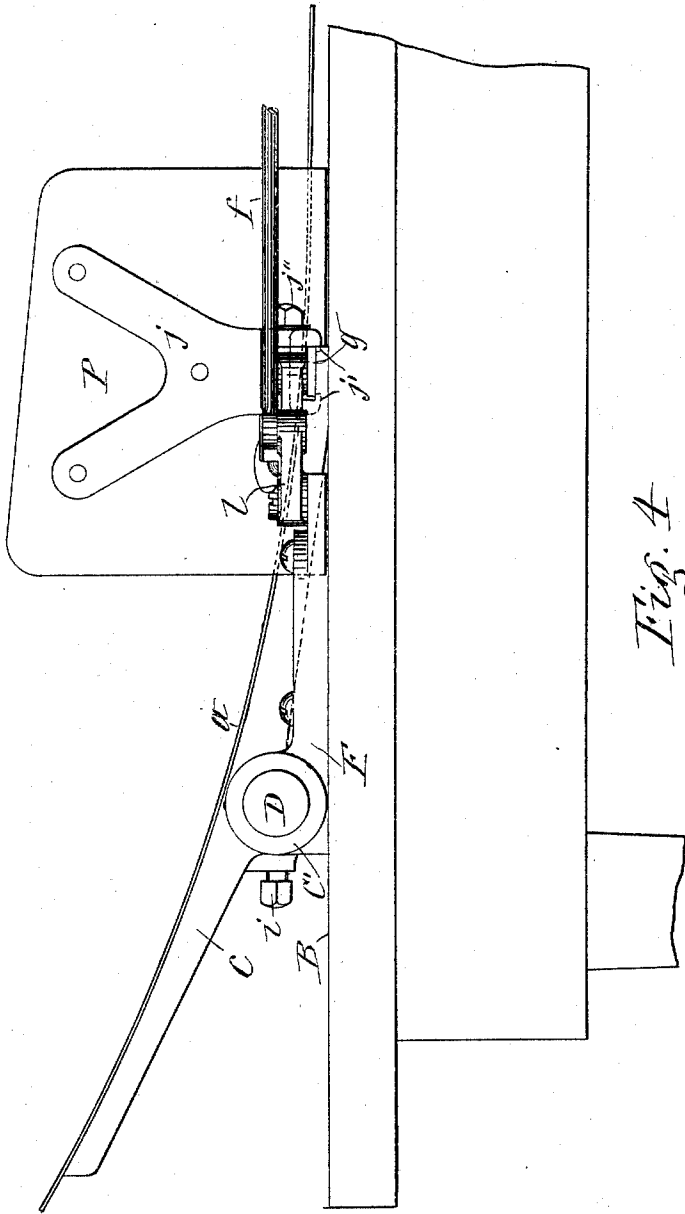


Fig. 4

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(No Model.)

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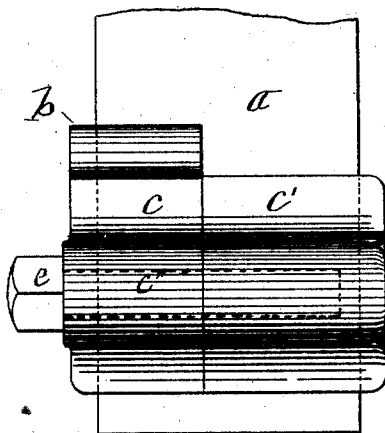


Fig. 5

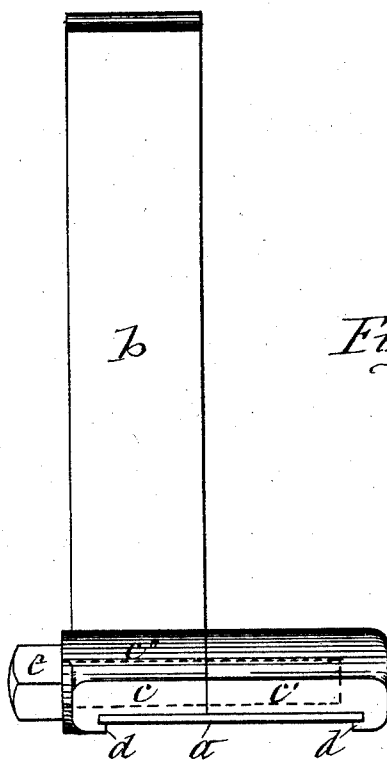


Fig. 6

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UNITED STATES PATENT OFFICE.

THOMAS A. BRIGGS, OF ARLINGTON, MASSACHUSETTS.

DEVICE FOR PILING PAPER.

SPECIFICATION forming part of Letters Patent No. 503,576, dated August 22, 1893.

Application filed September 24, 1892. Serial No. 446,774. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. BRIGGS, of Arlington, in the county of Middlesex, in the State of Massachusetts, have invented new and useful Improvements in Devices for Piling Paper, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of machines or apparatus which are designed to pile up in a neat and even manner sheets of paper issuing from a printing machine or other machine operating successively on single sheets. And the invention consists in an improved organization of a machine which effects the aforesaid piling of paper in an expeditious and more accurate manner, as hereinafter fully described and set forth in the claims.

In the annexed drawings Figure 1 is a side elevation of a paper piling machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged plan view of one side of the paper receiving bed and paper adjusting device employed therewith. Fig. 4 is an enlarged side elevation of said part of the machine. Figs. 5 and 6 are respectively an enlarged plan view and an elevation of the attachment of the paper abutment to the paper receiving bed, and Fig. 7 is a plan view of a modification of the means for transmitting motion to the laterally movable paper adjusting plates.

Similar letters of reference indicate corresponding parts.

A—represents the oscillatory fly which delivers single sheets of paper successively from a printing machine or other machine onto a table—B—on which said sheets are to be deposited in a smooth and evenly piled condition. To accomplish this smooth and even piling of the sheets of paper in an expeditious and reliable manner and by simple and efficient means I have resorted to the following construction and combination of mechanisms.

Upon the table—B—I mount my improved paper receiving bed which is provided at the end adjacent to the heel or pivoted end of the fly with suitable stops or abutments—b—b—parallel with the axis of the fly and receiving one edge of the paper piled on the said bed. The peculiarities of my said paper receiving

bed consists in the inclination of the paper supporting surface thereof toward the aforesaid stops or abutments. Said inclination causing the sheets of paper, as they are thrown onto the bed or pile resting thereon, to slide automatically to the said abutments. In addition to said inclination my improved paper-receiving bed possesses the novel and important feature of being concaved longitudinally or formed with a depression across its center. The paper is thus curved when dropping onto the bed. The curving of the side edges of the sheet stiffens said edges and obviates the liability of bruising the same by their contact with the laterally moving plates which push the sheet into its requisite position on the bed as hereinafter described.

My invention also consists in the following novel features of the details of the aforesaid paper-receiving bed and devices employed in connection therewith. Said bed I preferably form of shoes—C—C—which are firmly secured to the top of the table—B—and are inclined toward the side of the table adjacent to the fly—A—and concaved in the same direction as shown in Fig. 1 of the drawings. In order to allow the said shoes to be adjusted laterally in their positions I provide them with perforated ears—C'—on their under sides, through which ears passes a horizontal shaft—D—which is secured to clips—F—fastened to the table. By means of a set-screw—i—passing through one side of each ear—C'—and engaging the shaft, the shoes are retained in their adjusted positions. Upon the tops of the said shoes I fasten thin steel leaves—*a*—*a*— which are bent to conform to the concaved surfaces of the shoes and terminate with their free ends at or near the edge of the table adjacent to the fly—A— where the abutments—*b*—*b*— are secured to two or more of the leaves. Each of these abutments I prefer to make detachable from the leaves by attaching it by means of jaws—*c*—*c'*— mounted side by side on the leaf and formed with hooks—*d*—*d*— by which they engage opposite edges of the leaf as more clearly shown in Figs. 5 and 6 of the drawings. The jaw—*c*— has affixed to it a vertical plate which forms one of the abutments—*b*. The top of said jaw is formed with a smooth bored ear—*c''*— and the other

jaw —*c'*— has a screw-tapped ear, and into said ears is inserted the clamping bolt —*e*— by means of which the jaws are drawn together and made to firmly grip the leaf —*a*.

5 In connection with the described paper-receiving bed I employ laterally joggling plates —*P—P*— which stand vertically and in lines at right angles to the abutments —*b—b*— and in such positions as to allow them to alternately engage opposite edges of the pile of paper resting on the aforesaid bed. These plates are firmly mounted on a reciprocating horizontal bar —*g*— which extends across the bottom of the bed and receives motion by a
10 suitable lever —*l*— which is oscillated by a pitman —*f*— actuated automatically with the movement of the fly. By mounting the plates —*P—P*— on one and the same bar they are compelled to move synchronously and, by the reciprocating motion of said bar, said plates
20 are caused to alternately approach and recede from opposite edges of the pile of paper and of the sheet which is in process of being deposited on the pile, and by the contact of
25 the said joggling or laterally moving plates said sheet is guided and properly adjusted so as to come perfectly even with the side edges of the pile while the sheet automatically slides onto the stops or abutments —*b—b*— which
30 brings the abutting edge of the sheet flush with the edge of the pile.

By the movement of the plates —*P—P*— simultaneously in the same direction, only one of said plates at a time is allowed to touch
35 the paper, and consequently the liability of pinching and retarding the movement of the sheet in transit on the table is effectually obviated.

In order to allow the plates —*P—P*— to be
40 adjusted in their positions to accommodate between them piles of paper of different widths, I mount said plates longitudinally adjustable on the bar —*g*—, and this I prefer to effect by attaching each of said plates to a
45 bracket —*j*—, the base of which is formed with a clamp —*j'*— similar to the jaws —*c—c'*— by which the abutment —*b*— is attached to the leaf —*a*— as hereinbefore described. A bolt —*j''*— inserted transversely
50 in the clamp —*j'*— fastens the same to the bar —*g*—. The lever —*l*— which transmits motion to the bar —*g*— I prefer to pivot to the clip —*F*—. One arm of said lever may be either pivotally connected to the end of the
55 bar —*g*— as shown in Figs. 1, 2, 3 and 4 of the drawings, or provided with a toothed segment —*n*— engaging a rack —*n'*— on the bar —*g*— as shown in Fig. 7 of the drawings. The other arm of said lever is connected to
60 the end of the pitman —*f*— which receives reciprocating motion from the crank —*I*— of the fly-shaft.

In order to permit the pitman to be adjusted to a longer or shorter stroke and thus
5 regulate the motion of the plates —*P—P*— accordingly, I mount on the pitman two lugs —*h—h*— respectively at opposite sides of the

wrist-pin of the crank —*I*— which engages alternately said lugs and thereby pushes the pitmen alternately in opposite directions. 70 Said lugs are permitted to be shifted longitudinally on the pitman to set them at a greater or less distance apart, and by means of set-screws connected to the lugs and engaging the pitman said lugs are retained in their adjusted positions. 75

Inasmuch as my invention is designed to be applicable to printing machines and other machines of the class hereinbefore referred to already in use as well as to such machines 80 in process of construction, I mount my invention on a table —*B*— separate from the frame of the aforesaid machine, and make the pitman —*f*— adjustable in its length by forming the same of two parts spliced together by 85 a clip —*f'*— attached to the inner end of each part and embracing the body of the other part and clamped thereon as best seen in Fig. 2 of the drawings.

Having described my invention, what I 90 claim as new, and desire to secure by Letters Patent, is—

1. A paper-piling apparatus comprising a paper receiving bed, abutments rising from said bed to receive one edge of the pile of 95 paper, and vertical plates movable simultaneously in the same direction in lines at right angles to the aforesaid abutments and engaging one at a time opposite edges of the pile of paper as set forth. 100

2. In combination with the paper transferring fly, a paper-receiving bed having abutments for one edge of the pile of paper adjacent to and parallel with the axis of the fly, and said bed inclined toward the abutments, 105 and laterally joggling plates at right angles to the said abutments and alternately engaging opposite edges of the pile of paper as set forth.

3. In combination with the paper transferring fly, a paper-receiving bed having its paper supporting surface formed with a depression across its center to support the paper in a bent condition and thereby stiffen the side edges thereof, and laterally joggling 115 plates engaging said edges of the paper, as set forth.

4. The combination of an oscillatory paper-delivering fly, a paper receiving bed provided adjacent to said fly with abutments for one 120 edge of the pile of paper and having its paper supporting surface inclined to said abutments and concaved, to bend the paper and thereby stiffen the side edges thereof, and laterally reciprocating vertical plates engaging 125 alternately opposite edges of the pile of paper at right angles to the aforesaid abutments, substantially as set forth and shown.

5. The combination of an oscillatory paper delivering fly, a paper receiving bed provided 130 adjacent to the fly with abutments for one edge of the pile of paper, and having its paper-supporting surface inclined toward said abutments, a longitudinally movable bar ex-

tending across the aforesaid bed, vertical plates secured at right angles to and both moving with said bar, a lever imparting reciprocating motion to the bar, and a pitman transmitting motion from the fly to the said lever, as set forth.

6. The combination, with the paper-receiving bed, of a reciprocating bar extending across said bed, and vertical plates mounted on and both moving with said bar and longitudinally adjustable thereon to accommodate piles of paper of different widths between said plates as set forth.

7. The combination, with the table —B—, of the shoes —C—C— secured to the top of said table and inclined in one and the same direction, the leaves —a—a— secured lengthwise to the tops of said shoes and resting with their lower ends on the table and the abutments —b—b— secured to said ends of the leaves as set forth.

8. The combination, with the table —B—,

and abutments —b— of the shaft —D— secured to the top of the table, the shoes —C—C— mounted laterally adjustable on said shaft, and the leaves —a—a— secured to the tops of said shoes as set forth.

9. In combination with the crank —I— and table —B—, the paper-receiving bed on said table, the bar —g— extending across said table, plates —P— mounted on said bar, the lever —l— operating said bar, the pitman —f— connected at one end to said lever, and the lugs —h—h— connected longitudinally adjustable to said pitman at opposite sides of the wrist-pin of the crank, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 17th day of September, 1892.

THOMAS A. BRIGGS. [L. s.]

Witnesses:

GEO. A. PERKINS,
JOHN J. SCOTT.