

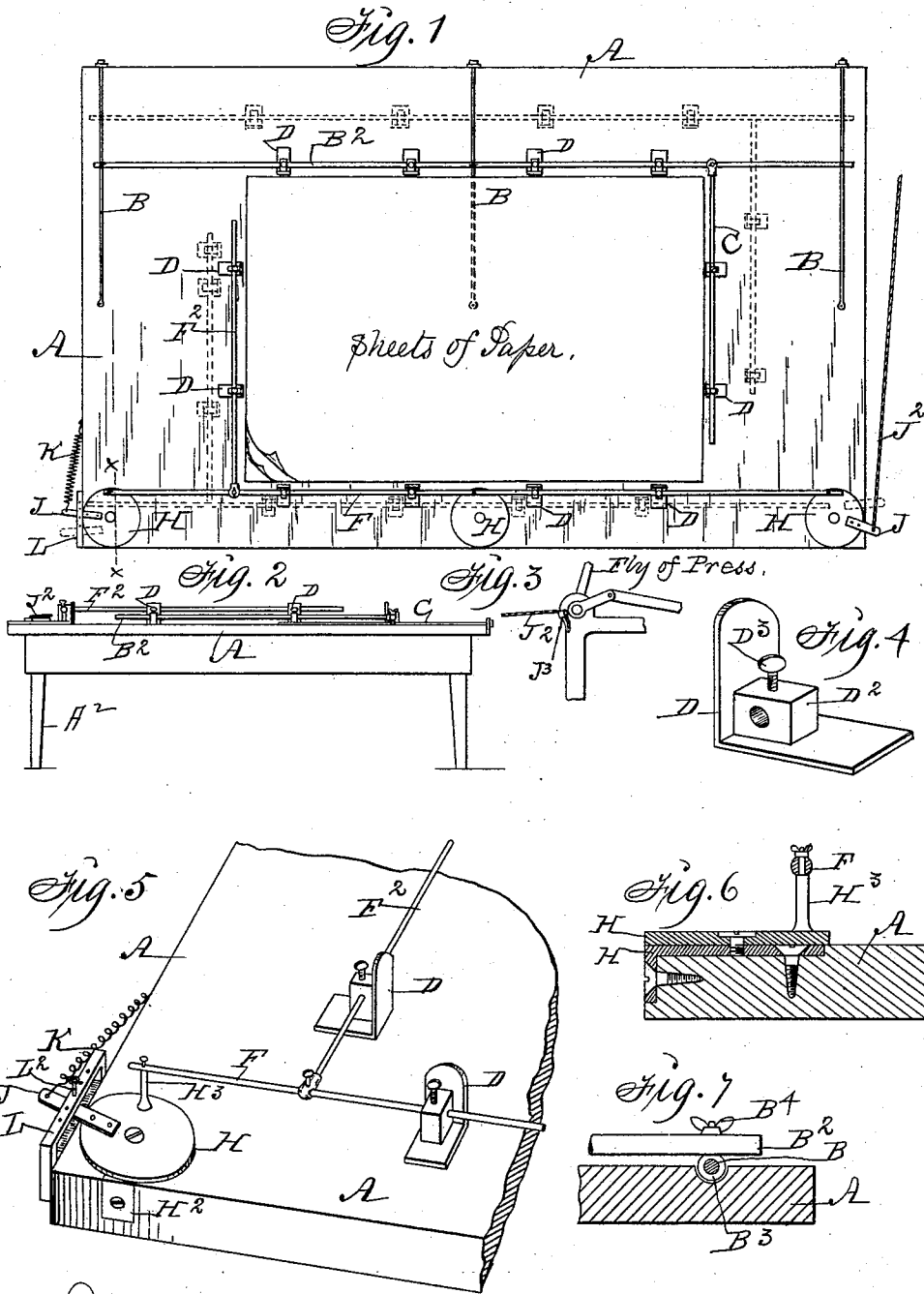
(No Model.)

A. BINKARD.

PAPER STRAIGHTENER FOR PRINTING PRESSES.

No. 478,079.

Patented July 5, 1892.



Witnesses:
W. J. Sankey.
R. H. Orwig

Inventor: Alfred Binkard,
By Thomas G. Orwig, Attorney.

UNITED STATES PATENT OFFICE.

ALFRED BINKARD, OF DES MOINES, IOWA.

PAPER-STRAIGHTENER FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 478,079, dated July 5, 1892.

Application filed March 5, 1892. Serial No. 423,807. (No model.)

To all whom it may concern:

Be it known that I, ALFRED BINKARD, a citizen of the United States of America, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Paper-Straightener for Printing-Presses, &c., of which the following is a specification.

My object is to provide improved means for straightening the edges of a number of papers as they are delivered from the fly of the printing-press, which means shall be cheap and simple in construction, positive and direct in its action, and connected with the printing-press, as required to be operated thereby.

My invention consists in the construction of a rectangular table adapted to be placed in juxtaposition to the vibrating fly of a press, having improved means thereon for straightening the edges of papers as they are placed thereupon from the press, in the construction and application of the mechanism for operating the device by means of motion imparted by the press, and in certain other features of construction and combination of its various parts, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of the complete device, the dotted lines thereon showing the direction in which the guide-bars operate. Fig. 2 is an end elevation of the same. Fig. 3 is an enlarged detail view of a portion of the vibrating fly of a press, its frame which supports it, and the lever or shaft which operates it to illustrate the manner in which the means for actuating the straightening device is connected therewith. Fig. 4 is an enlarged detail perspective view of one of the guides. Fig. 5 is a perspective view of one of the corners of the table, showing the means for returning the guide-arms to their normal position after they have been moved in one direction. Fig. 6 is a vertical sectional view through the line $x x$ of Fig. 1, and Fig. 7 is a like view through the line $z z$, same figure.

Referring to the accompanying drawings, the reference-letter A designates a rectangular table supported on the legs A².

B are rods secured to one side of the table and extended inwardly on the table at right angles to the side thereof in grooves formed

in the table-top to lower the rods relative to sheets of paper placed on top of the table.

B³ is a guide-bar adjustably connected with the rods B by means of the eyebolts B³, encircling the rods B and extended upwardly through the bar B³ and provided with a thumb-nut B⁴, as clearly illustrated in Fig. 7.

C is an auxiliary guide-bar adjustably attached to the bar B³ and extended at right angles thereto.

D represent guides adjustably fixed to the guide-bars B³ and C at suitable distances thereupon to engage the edges of the papers. Their front and bottom edges are smooth and flat.

D² are metal blocks secured to the said guides and transversely bored to admit the said guide-bars.

D³ is a set-screw in a vertical bore which intersects the aforesaid transverse bore.

F and F² represent guide-bars similar to the bars B³ and C, respectively, and also provided with the guides D at suitable distances thereupon.

H represent crank-wheels rotatably mounted in the angle-irons H², fixed to the top of the table and at the edge opposite to the one to which the rods B are secured. To their inner top surfaces the guide-bar F is pivoted, so that when a rotary reciprocating motion in the segment of a circle is imparted to the said crank-wheels a rotary reciprocating motion in a plane diagonally across the table will be imparted to the said guide-bar.

To provide means for actuating the hereinbefore-described mechanism from the vibrating fly of a printing-press, I employ the following mechanism: J are crank-arms formed on or fixed to the two outer crank-wheels and extended outwardly therefrom. J² is a rod or rope (preferably the latter) secured to the outer end of one of the said crank-arms and to an extension J³ on the outer end of the shaft which actuates the fly of the press, as clearly shown in Fig. 3 of the drawings. This arrangement, it will be seen, actuates the guide-bars in but one direction. K represents a coil-spring attached to the outer end of the other crank-arm and to the table to return the guide-arms to their normal position.

I provide means for limiting the forward

stroke of the guide-bars as follows: L represents a frame secured to the side of the table and having the top surface provided with a series of vertical bores to admit a pin L².

- 5 The said crank-arm, being extended there-through, will engage the said pin on its forward stroke, and thereby limit its movement. I prefer to arrange the guide-arms on one side of the table in a higher plane than the other
10 ones, so that they may be adjusted to small papers and operate without interfering with each other, as shown in Fig. 2.

Having thus described my invention, what I claim as new therein, and desire to secure by

- 15 Letters Patent, is—

1. In a paper-straightening device, the combination of a plurality of rods fixed to one side of the top surface of a table and extended inwardly in grooves formed in the top of the
20 aforesaid table, a guide-bar adjustably connected with the said rods, an auxiliary guide-bar extended at right angles thereto and adjustably connected therewith, and a plurality of guides having smooth front surfaces ad-
25 justably fixed to the said guide-bars, and means for bringing sheets of paper in contact with said guides, substantially as and for the purposes stated.

2. A paper-straightening device comprising
30 a table arranged to receive the papers from the vibrating fly of a printing-press, a plurality of crank-wheels mounted in the top of the said table, a guide-bar pivoted to the front

edges of the said crank-wheels, an auxiliary guide-bar adjustably attached to the said
35 guide-bar, guides connected with the said guide-bars at suitable distances therefrom, means for engaging the opposite edges of the papers, and means for actuating the said
40 crank-wheels, substantially as set forth.

3. A paper-straightening device comprising a table arranged to receive the papers from the vibrating fly of a printing-press, adjust-
45 able guides attached to one side and end of the table at right angles to each other, a plurality of crank-wheels mounted on the top of the said table, a guide-bar pivoted to the front
50 edges of the said crank-wheels, an auxiliary guide-bar adjustably attached to the said guide-bar, guides connected with the said guide-bars at suitable distances thereupon,
55 crank-arms secured to the outer crank-wheels and extended outwardly therefrom, means for connecting one of the said crank-arms with the shaft which actuates the vibrating
60 fly of a printing-press, a spring attached to the outer end of the other crank-arm and fixed to the table to actuate the guide-bar on its return stroke, and means for limiting the forward movement of the said guide-bars, sub-
stantially as set forth.

ALFRED BINKARD.

Witnesses:

J. RALPH ORWIG,
THOMAS G. ORWIG.