

No. 636,442.

Patented Nov. 7, 1899.

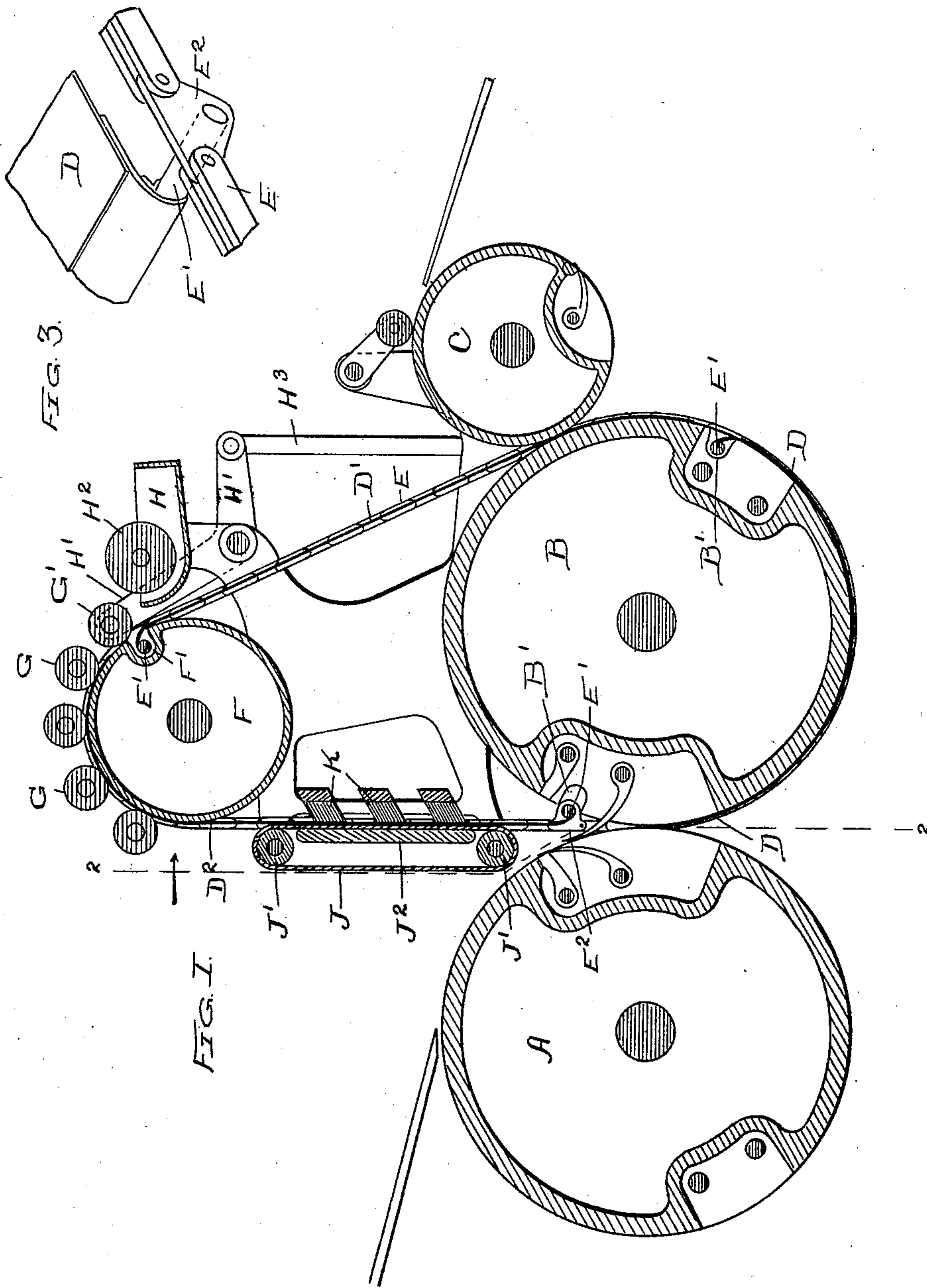
R. MIEHLE.

OFFSET MECHANISM FOR PRINTING PRESSES.

(Application filed June 21, 1897.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

Sew. C. Curtis
H. M. Munday

INVENTOR:
ROBERT MIEHLE

BY *Munday, Curtis & Alcock*

HIS ATTORNEYS.

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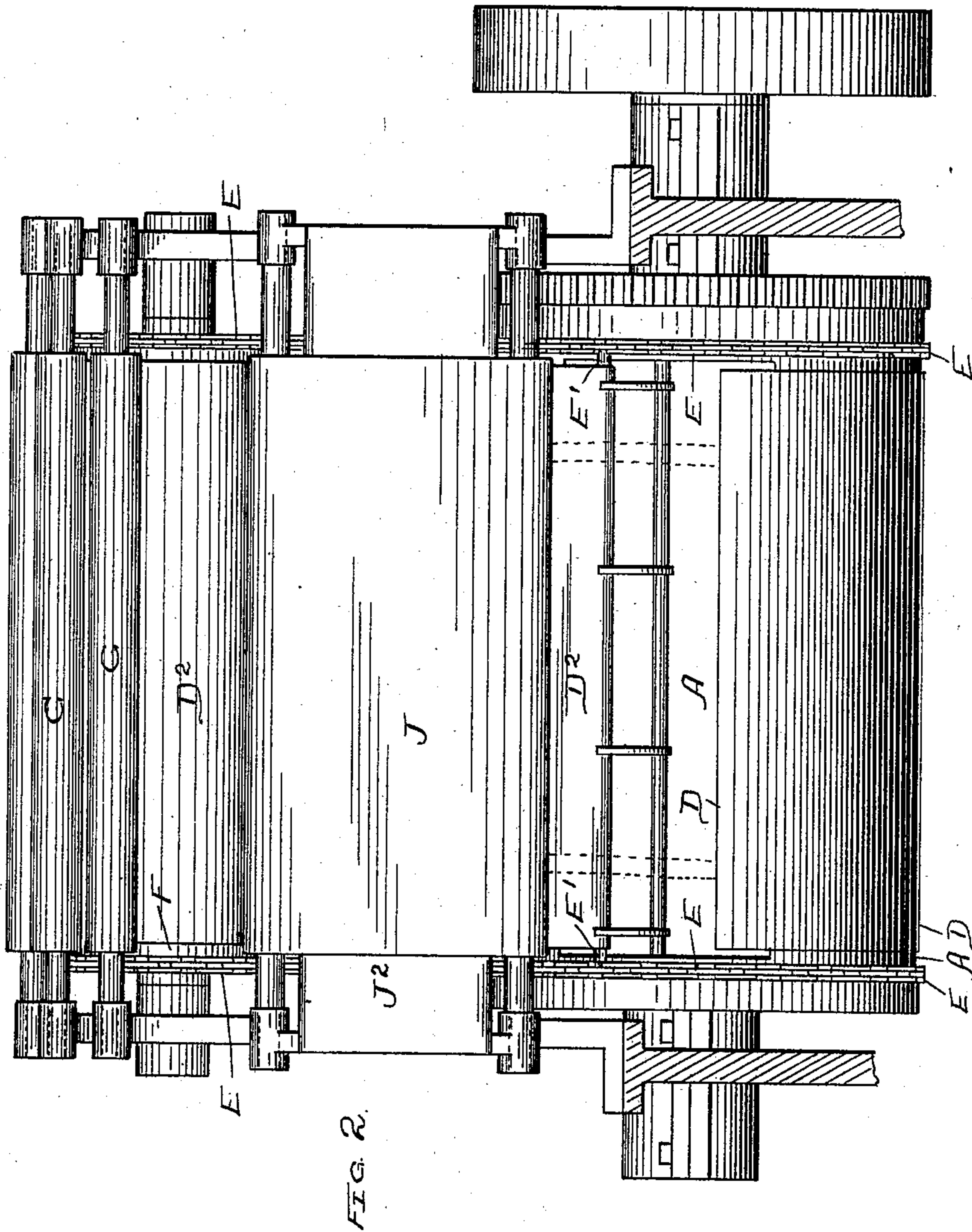
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(No Model.)

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2 Sheets—Sheet 2.



WITNESSES:
Lew. E. Curtis
J. M. Munday

INVENTOR:
ROBERT MIEHLE.
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HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT MIEHLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE MIEHLE PRINTING PRESS AND MANUFACTURING COMPANY, OF SAME PLACE.

OFFSET MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 636,442, dated November 7, 1899.

Application filed June 21, 1897. Serial No. 641,645. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MIEHLE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Offset Mechanism for Printing-Presses, of which the following is a specification.

This invention relates to improvements in offset mechanism for perfecting printing-presses which print both sides of the sheet, and in it I employ a traveling offset sheet for the second impression-cylinder and give such sheet an endless path, during only a portion of which it is in contact with the cylinder, and subject it to the action of cleaning devices while it is away from the cylinder. I also pass the sheet over a smooth flat surface during the intervals between its contacts with the printed sheets. I also subject it to pressure while it is moving over said surface, and thereby smooth out the indentations in it caused by the type. I also prefer to attach the sheet at its opposite side edges to carrying chains or belts, and in that way it can be kept taut and free from wrinkles, and I preferably employ a plurality of the offset sheets and attach them to said chains, making the latter of proper length to bring the sheets around the cylinder in alternate order. For the purpose of cleaning and pressing the offset sheet it is, after being charged with oil, passed over a smooth-surfaced drum, and while on said drum it is pressed by absorbent rollers, and I also pass it between opposing devices, one formed by a stationary plain surface and an absorbent belt moving over said surface and in contact therewith and the other formed by a brush or brushes adapted to exert gentle pressure upon the sheet and to press it toward the belt.

The nature of my improvement is fully set forth in the description given below, and is also disclosed in the accompanying drawings, forming a part of said description, in which—

Figure 1 is a vertical section of a portion of a printing-press, showing my invention applied thereto. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is a detail perspective of a portion of the invention.

In said drawings, A and B represent the

impression-cylinders of a double-cylinder or perfecting two-revolution cylinder printing-press, the cylinder B being second in order and receiving the sheets from cylinder A after they have been printed on one side. C is the delivery-cylinder taking the sheets from cylinder B. All these cylinders are provided with grippers of any suitable construction.

As stated, I prefer to employ a plurality of offset sheets, and hence have shown three of them at D, D', and D². They are attached to and carried by said chains (or belts) E E and at their forward ends are each attached to a cross-rod E', secured to the links of the chains in planes inside the plane of the acting faces of the sheets. The attachment of the sheets to these chains enables me to keep the sheets free from wrinkles. The chains pass around the cylinder B and are actuated thereby, and said cylinder is provided with transverse slots or pockets B', adapted to receive the cross-rods E'. The chains and offset sheets also pass around a drum F, located at a proper distance from the cylinder B and also provided with a slot or pocket F', adapted to receive said cross-rods. This drum is provided with a hard and smooth surface. In proximity to the drum are a series of absorbent rollers G G, covered with soft absorbent material and adapted to exert some pressure upon the offset sheets as they move over the drum. One of this series of rollers—the first one, G'—acts to charge the offset sheets with oil from the tank H, and to enable it to perform this service said roller is mounted upon the upper end of the elbow-lever H' and is carried by said elbow-lever at proper intervals into contact with the roller H², located in the oil-tank and adapted to supply the roller G' with the oil. The roller H² is rotated by mechanism, (not shown,) and it will be understood also that the elbow-lever H' is actuated by appropriate mechanism through the medium of the rod H³. After passing the drum F and rollers G the offset sheets are preferably passed between other pressing and cleansing devices, consisting of the absorbent belt J, supported upon idler-rollers J' and backed by a plate J², stationarily supported against the belt where it comes in contact with the offset

5 sheets. Upon the other side of the offset sheets and opposed to the belt J are a series of brushes K, the bristles of which are preferably inclined in the direction in which the offset sheets move, so that the offset sheets will pass them without catching the bristles. The belt and brushes help materially in flattening out the indentations in the sheet, inasmuch as the bristles are adapted to exert
10 considerable pressure on the sheet while the latter is supported at the opposite side of the belt.

In the construction shown each offset sheet passes around the impression-cylinder at each
15 third revolution of the latter, and they alternate with each other in preventing the offset, and consequently between their times of service they are subjected to the repeated action of the cleansing and pressing devices,
20 so that they are kept comparatively clean and smooth and their life of service is much prolonged.

The belt J and brushes K have, to some extent, a wiping action upon the offset sheets.
25 The brushes are stationary in location and press against the sheets and cause them to wipe against the belt. The pressure thus caused against the belt also tends to move it along and to constantly change the surface presented to the sheets. The belt may,
30 however, if desired, be moved around slowly by giving a positive motion to its carrying-rollers.

It is obvious that the invention may be
35 used in other presses than the particular kind shown.

I claim—

1. The combination with the impression-cylinder and its traveling offset sheet, of a
40 drum over which the sheet is passed, a belt J backed by a stationary flat surface upon one side of the path of the offset sheet, and pressure devices upon the other side thereof, substantially as specified.

45 2. The combination with the impression-cylinder and its traveling offset sheet, of a drum over which the sheet is passed, a belt J backed by a stationary flat surface upon one side of the path of the offset sheet, and
50 a brush or brushes upon the other side thereof, substantially as specified.

3. The combination with the impression-

cylinder and its traveling offset sheet, of a drum over which the sheet is passed, a belt J made of absorbent material and backed by
55 a stationary flat surface upon one side of the path of the offset sheet, and pressure-creating devices upon the under side thereof, substantially as specified.

4. The combination with the impression-
60 cylinder and its traveling offset sheet, of a drum over which the sheet is passed, an absorbent surface upon one side of the path of the sheet, and a brush or brushes upon the other side thereof, substantially as specified. 65

5. In a printing-press, the combination with the impression-cylinder and the cleansing and pressing devices, of a plurality of offset sheets, chains or belts to which said sheets are attached, and a drum over which
70 the sheets and chains are passed, substantially as specified.

6. The combination with the impression-cylinder and its traveling offset sheet, of a drum over which the sheet is passed, a brush
75 K acting on the sheet while en route, and a stay or support for the sheet opposed to said brush, substantially as specified.

7. The combination with the impression-cylinder of an offset sheet, a cross-rod to which
80 the sheet is attached, and chains carrying said rod, the cylinder being provided with a transverse slot or pocket to receive such cross-rod, substantially as specified.

8. The combination with the impression-
85 cylinder, of an offset sheet, a cross-rod to which the sheet is attached, chains carrying said rod, and a drum over which the sheet is passed between operations, both the cylinder and drum having transverse slots to receive
90 the cross-rod, substantially as specified.

9. The combination with the impression-cylinder and the cleaning and pressing devices, of a series of offset sheets carried by chains and cross-rods, and acting in alter-
95 nate order in preventing the offset, and subjected to the repeated action of the cleaning and pressing devices between their times of service, substantially as specified.

ROBERT MIEHLE.

Witnesses:

H. M. MUNDAY,
EDW. S. EVARTS.