

No. 647,406.

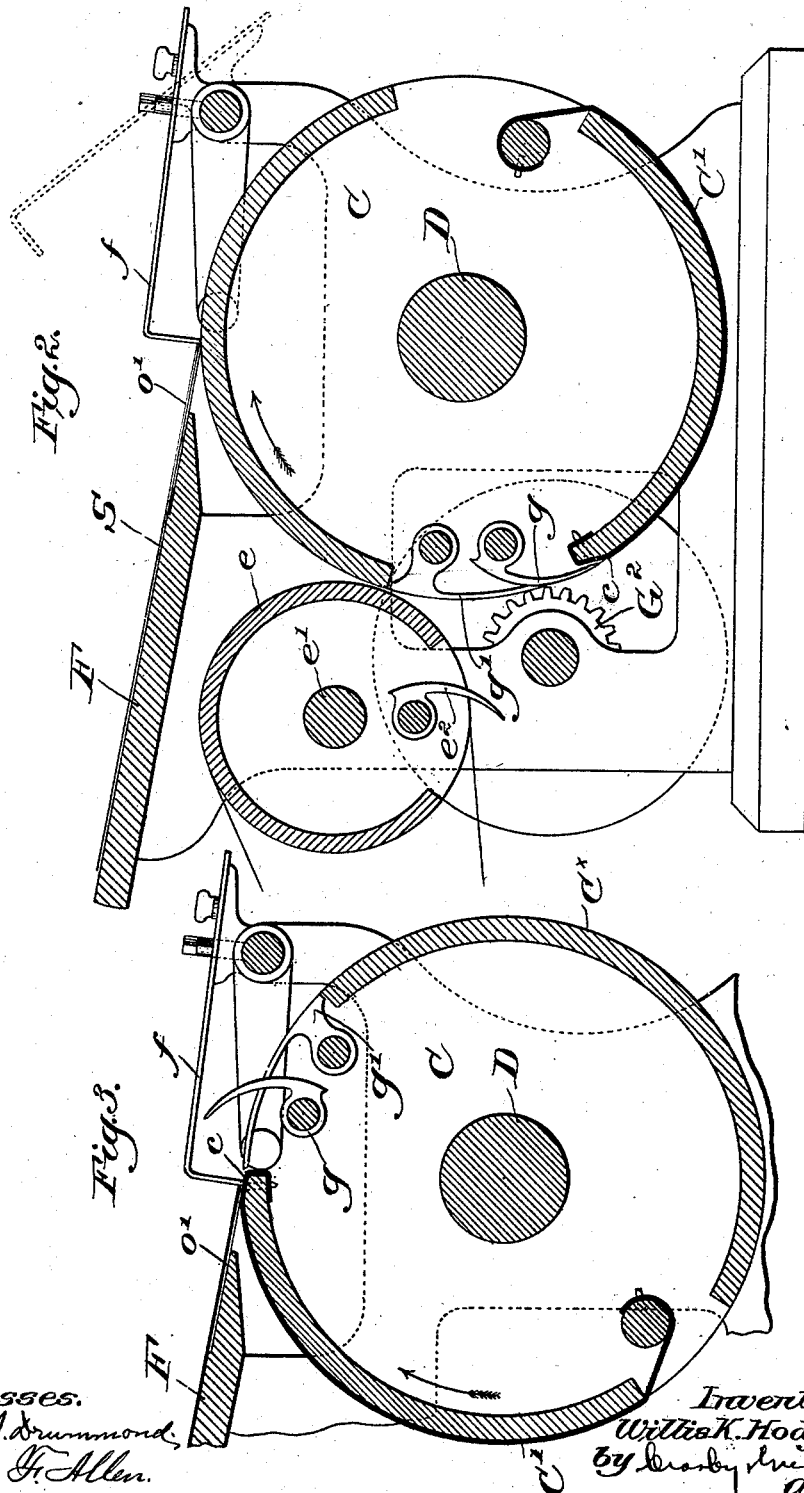
Patented Apr. 10, 1900.

W. K. HODGMAN.
PRINTING PRESS.

(Application filed Nov. 30, 1898.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIS K. HODGMAN, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE
HUBER PRINTING PRESS COMPANY, OF SAME PLACE.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 647,406, dated April 10, 1900.

Application filed November 30, 1898. Serial No. 697,815. (No model.)

To all whom it may concern:

Be it known that I, WILLIS K. HODGMAN, of Taunton, county of Bristol, State of Massachusetts, have invented an Improvement
5 in Printing-Presses, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to printing-presses
10 of the class having a continuously-rotating impression-cylinder provided with grippers which at each rotation of the impression-cylinder grasp a sheet fed thereto and in the further rotation of said cylinder present such
15 sheet to the form-cylinder to receive the impression therefrom.

In feeding sheets to the impression-cylinder of a printing-press proper register is obtained by the use of suitable front stops
20 called "front guides," against which the leading edge of each sheet is fed, the grippers taking such sheets from the position thus determined by said front guides. To prevent the sheets slipping under the front guides,
25 it is desirable that said front guides drop below the level of the under supports of the sheet, usually called "under guides," and originally such under supports or under guides were in the form of fingers projecting
30 from the feed-board over but clearing the surface of the rotating impression-cylinder. Such form of under guides was found defective when used in a press employed in surface or lithographic printing requiring the
35 most accurate register, because the grippers engage the sheets between these raised under guides and pressing the sheet down upon the surface of the impression-cylinder left the portion on top of the under guides raised
40 in the form of puffs, which in the further rotation of the impression-cylinder were ironed out in the form of wrinkles or else destroyed the register of the sheet. To obviate this difficulty by feeding the sheets directly upon
45 the moving surface of the rotating impression-cylinder whenever it is to be clamped and yet permit the front guides to drop below the level of the sheet, so as to form an effectual stop therefor, my United States Pat-
50 ent No. 340,785, dated April 27, 1886, disclosed an impression-cylinder provided with

circumferential ribs and depressions, which permitted the sheets to be fed directly upon the revolving raised portions or ribs, which thereby served as under guides and at the
55 same time permitted the front guides to stand partly or wholly in the intervening grooves, and therefore below the edge of the sheet, as required, to constitute an effectual stop therefor.

The object of my present invention is to provide a simpler and more economical construction to accomplish substantially the same result as accomplished by my said Patent No. 340,785.

The nature of my present invention will best be understood by reference to the accompanying drawings, taken in connection with the following description, illustrating
70 the best mode now known to me of carrying out my said invention.

Referring to the drawings, Figure 1 is a top or plan view of a portion of a printing-press containing my invention; Fig. 2, a vertical cross-section thereof on the dotted lines *xx*,
75 and Fig. 3 a similar section showing the parts in different position.

In the particular embodiment of my invention herein selected for illustration, A A indicate usual side frames of a printing-press,
80 C the continuously-revolving impression-cylinder, having an impression-surface C' mounted on its shaft or journals D, *e* the delivery-cylinder mounted on a shaft *e'* and having usual grippers *e*², P P' tight and loose pulleys which by means of the driving-shaft G³
85 and driving-pinions G² transmit motion to the impression-cylinder gear G, which is fastened on one end of the shaft D and which meshes with the delivery-cylinder G', fastened on one end of the shaft *e'*, F the feed-board, *g* the impression-cylinder grippers,
90 and *g'* the bridge-pieces spanning the gripper-cavity, all of which are and may be of usual or desired construction—such, for instance, 95 as indicated in general in my said Patent No. 340,785, to which reference may be had, like letters indicating like parts.

The shafts carrying the grippers may be supported in any usual or suitable manner,
100 so that they may travel with the cylinder.

In accordance with my present invention

I make that portion of the impression-cylinder that lies opposite the impression-surface C' and indicated at C^x of a diameter substantially that of the surface upon which the edge of the sheet to be printed is clamped by the grippers *g*. This portion C^x of the impression-cylinder is thus constituted a moving under guide upon which the leading edges of the sheets may be fed and positioned without in any manner interfering with the continuous rotation of the impression-cylinder.

The sheet is herein indicated by a single line (lettered S) and for clearness is shown slightly raised above the feed-board and under guides to leave a clear space beneath, it being understood, however, that in practice the sheet will lie upon the feed-board or other support for it. To raise the leading edge of the sheet so fed at the necessary points to enable the usual front guides *f* properly to check and position the edge of the sheet, I have provided the feeding edge of the feed-board F with a slight depression *o*, in and along which in desired adjusted position may be secured in suitable manner the thin preferably flexible strips *o'* of paper, leather, rubber, or the like. These strips *o'* act as under guides to conduct the sheets from the feed-board down to and upon the under-guide surface of the impression-cylinder, and in the normal rotation of the said cylinder these strips preferably contact lightly with the under-guide surface C^x thereof, although this is not necessary. The front guides *f* are preferably forked, as shown at *f'*, Fig. 1, or otherwise formed so that a portion or portions thereof may drop below the tops of the strips *o'*, and hence below the edge of the sheet where laid over the strips *o'*, to prevent said sheet from slipping through beneath said front guides and destroying the register of the sheet. Thus in the embodiment of my invention herein shown the sheet is mainly supported at its leading edge upon the under-guide surface C^x of the impression-cylinder and at the proper points is raised slightly where it passes over the strips *o'* in front of the front guides, (see Fig. 2, where the sheet is indicated at S,) the strips *o'* being shown as terminating at or close to said front guides.

When in the rotation of the impression-cylinder C the gripper-surface of said cylinder (herein the inclined face *c*) reaches a position under the strips *o'*, its angle or level is such that it comes evenly under said strips without altering the angle or position of the latter, as best shown in Fig. 3. When the impression-cylinder reaches this position, the grippers are actuated by usual mechanism (not shown) and closed from this position, Fig. 3, into their position Fig. 2, thus gripping or pressing the edge of the sheet tightly upon the gripping surface or face *c*, the front guides *f* being simultaneously raised into their dotted position, Fig. 2, to permit the sheet thus gripped to be carried around on

the impression-cylinder and presented to the form-cylinder, (not shown,) which in practice will be arranged preferably at the right of the impression-cylinder in Figs. 2 and 3. The grippers *g* hold the sheet until the latter is engaged by the delivery-cylinder grippers *e'*, when they are released preparatory to engaging a new sheet, as described.

By the construction described the sheet is clamped by the grippers *g* in substantially the plane in which it is held by the under-guide surface C^x of the impression-cylinder, and the thickness of the strips *o'* is so slight that no appreciable puff or fullness is produced thereby.

The proportions of the parts in the drawings are somewhat changed for the sake of clearness from the proportions as they exist in the actual machine.

The bridge-pieces *g'* are and will be of sufficient number to hold the sheet straight across without substantial depressions.

My invention as claimed is susceptible of various changes and modifications to adapt it to different presses and to different fancies without departing from the spirit and scope of the invention.

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

1. In a printing-press, a continuously-revolving impression-cylinder having an under-guide surface, combined with under guides adapted to ride upon said under-guide surface, and front guides arranged to coöperate with said under guides, the latter terminating at or near said front guides, substantially as described.

2. In a printing-press, a continuously-revolving impression-cylinder having an under-guide surface, a gripper-cavity and bridges spanning the same, combined with under guides adapted to ride upon the said under-guide surface, and coöperate with the latter in positioning the sheet, and the front guides.

3. In a printing-press, front guides, a continuously-revolving impression-cylinder having an under-guide surface, a gripper-cavity and bridges spanning the same, and under guides supported independently of said cylinder and arranged to operate in conjunction with the under-guide surface of said impression-cylinder to support the leading edge of the sheet.

4. In a printing-press, a continuously-revolving impression-cylinder having an under-guide surface and a beveled or inclined gripping-surface, and under guides supported independently of said impression-cylinder and standing normally below the highest level of the said gripping-surface to coöperate with the under-guide surface of said cylinder in supporting the leading edge of the sheets and the front guides.

5. In a printing-press, a continuously-revolving impression-cylinder having a gripper-

cavity, with a bridge or bridges spanning the same, and front guides, combined with under guides supported independently of the said cylinder and resting upon the said under-
5 guide surface and bridge piece or pieces to raise the edge of the sheet for engagement with the said front guides.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIS K. HODGMAN.

Witnesses:

THOMAS J. DRUMMOND,
FREDERICK L. EMERY.