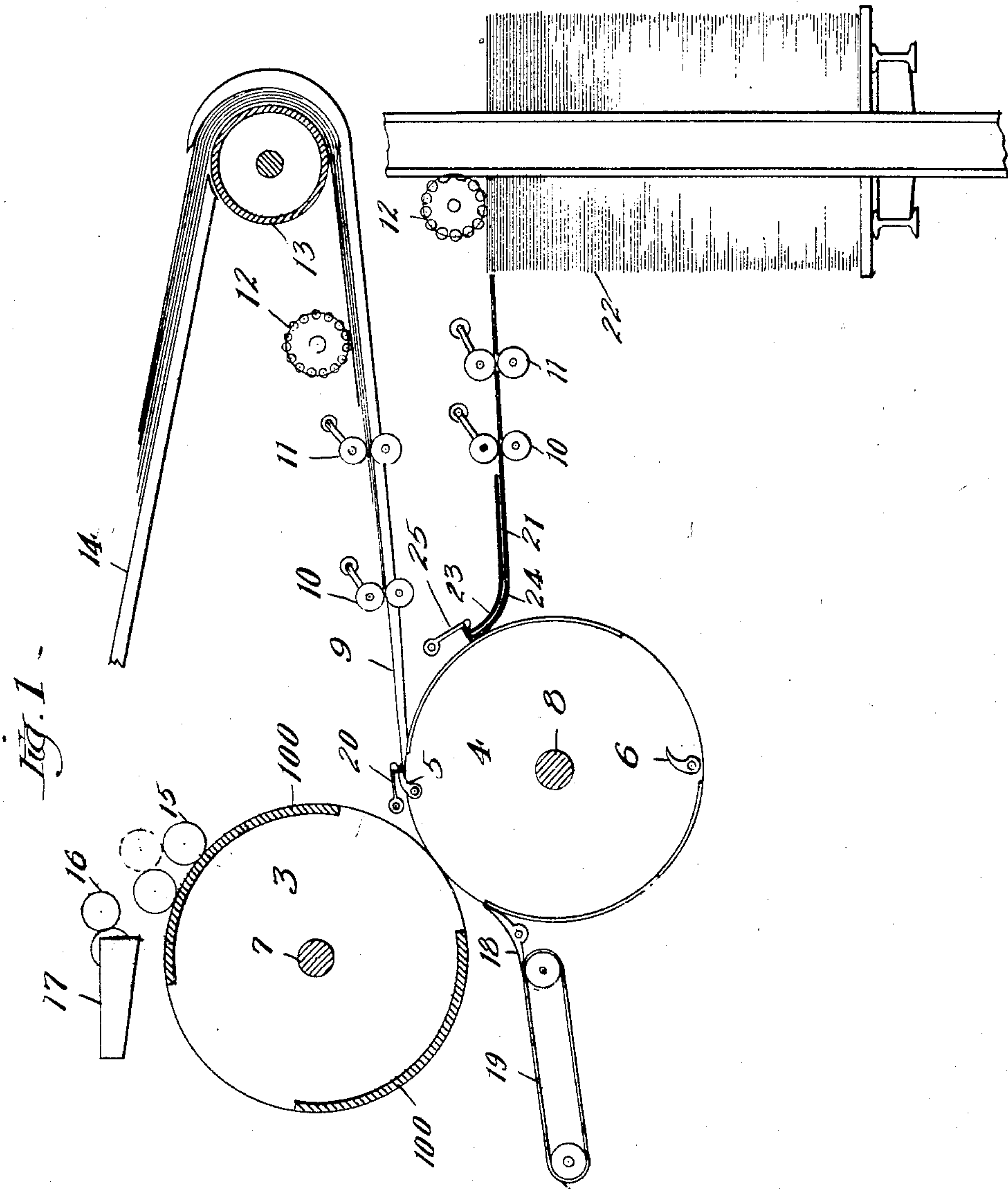


B. F. UPHAM.
PRINTING PRESS.
APPLICATION FILED FEB. 18, 1909.

931,099.

Patented Aug. 17, 1909.
2 SHEETS—SHEET 1.

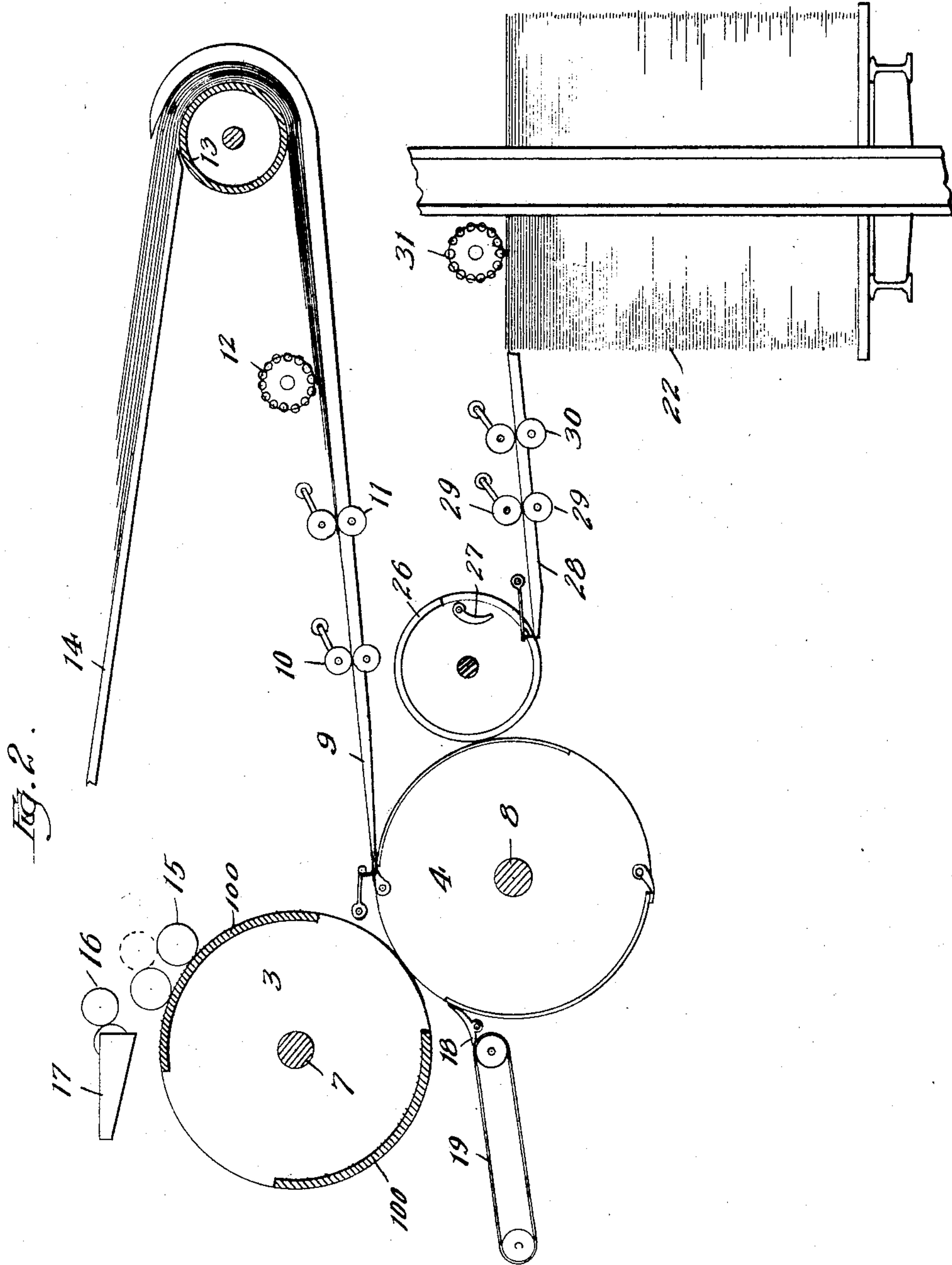


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931,099.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

BURT F. UPHAM, OF BOSTON, MASSACHUSETTS.

PRINTING-PRESS.

No. 931,099.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed February 18, 1909. Serial No. 478,729.

To all whom it may concern:

Be it known that I, BURT F. UPHAM, a citizen of the United States, residing in Boston, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Printing-Presses, of which the following is a specification.

In the construction of printing presses, the feed tables are always located at a tangent to the impression cylinder and so they can deliver the sheet at or near the crown of the cylinder and very nearly in the line in which the cylinder is moving. This arrangement is very desirable as the sheets do not need to change the direction of their movement prior to their being seized by the grippers, but it practically limits the printing presses to the use of a single feed table, and to the feeding of a single sheet only during each revolution of the cylinder. I have conceived, however, that an additional feed table can be placed so as to feed the sheets to some portion of the cylinder below the crown, by employing suitable feeding mechanism and guiding devices acting to direct the sheets from such additional table into parallelism with the surface of the cylinder at the point where they reach the cylinder, such construction being especially desirable as it increases the capacity of the press by feeding more sheets than can be fed from a single table. This additional or second feed table is located under the usual one delivering the sheets to the crown of the cylinder, and may carry the sheets to a plane as low as the axis of the cylinder, where the cylinder is of the ordinary diameter, and is provided at its delivery end with upwardly deflecting guides by which the sheets are turned into parallelism with the cylinder so they may be gripped, the cylinder having grippers timed to act upon the sheets as soon as they are properly positioned by the guides.

My invention is fully explained in the description given below, and also illustrated in the accompanying drawing, in which latter—

Figure 1 is a partial vertical section of a press embodying my invention. Fig. 2 is a view similar to Fig. 1, of a modified construction.

In said drawing, 3 represents the type cylinder and 4 the impression cylinder of the printing press, and the said impression cylinder is provided with grippers 5 and 6 for seizing the sheets as they are fed from

the feeding tables. Said type cylinder is mounted upon a shaft 7 and the impression cylinder on shaft 8. The feed table 9 is shown delivering the sheets to the crown of the impression cylinder in the customary way and this table may be provided with sheet feeding devices now extensively used and well understood and which may embrace the pairs of feeding rollers 10 and 11, also the combing roll 12 and the cylinder 13 drawing the sheets from a higher supply table 14. The type cylinder is supplied with ink by the rollers 15, which are charged by the rollers 16 from the ink-well 17, and the printed sheets are deflected from the impression roll by the guide 18 which delivers them to the tapes 19 carrying them to a receiving table (not shown). A gage 20 is customarily placed over the impression cylinder at the point where the sheets are delivered to it. These parts may be of the ordinary construction.

The preferred construction of the second feed table to which my invention relates is shown at 21 and it is provided with automatic sheet feeding devices adapted to draw the sheets from the pile 22. The feeding devices may consist of pairs of rolls 10 and 11 and a separating comber cylinder 12. To turn the sheets from the plane at which they approach the cylinder into parallelism with the moving surface of the cylinder, I provide this table 21 with upwardly deflecting guides 23 and 24, one above and the other below the paper. They are adapted, as will be seen, to deliver the advance edge of the sheet in substantial parallelism with the cylinder so that it can be seized by the grippers 6. At the delivery end of the curved guides, I place the customary gage 25. The sheets received from this table 21 are drawn from the cylinder when they reach the guide 18 and pass thence to the place of deposit in the same way as sheets received from table 9.

In the modified construction shown at Fig. 2, I show the same printing and impression cylinders and also two feed tables, the upper one being of the same construction as the upper one shown in Fig. 1, and it may also be provided with automatic feeding devices in the same manner. In the second feed table of this construction, however, I substitute for the deflecting guides 23 and 24 a feed cylinder 26 having grippers 27 adapted to take the sheets which are fed to it from

table 28 by the automatic feed rolls 29, 29 and 30, 30 and combing cylinder 31, and to carry them until their advance edges can be seized by the impression cylinder grippers 5 and be controlled from thence by such grippers.

Of course it will be understood that the sheet feeding devices of the two tables will be so timed as to avoid any interference between the sheets when delivered to the impression cylinder, the sheets from the first table being sufficiently in advance of those from the second table, so that the former will be out of the way before the latter are admitted to the cylinder. The type cylinder carries two type forms 100 and one of these prints the sheets from table 9 and the other the sheets from the second table 21 or 28.

By my invention the capacity of the press is greatly increased as the press is utilized in successively printing two sheets where heretofore it has only printed one. Of course these feed tables can be used separately if desired.

25 I claim:

1. The combination in a printing press, of a type cylinder having two type forms, an impression cylinder, a feed table delivering sheets to the crown of the cylinder, a second 30 feed table located under the first and nearly opposite the axis of the impression cylinder, said second table being provided with means at its delivery end directing the sheets upwardly into parallelism with the cylinder,

and the cylinder having grippers adapted to 35 take control of sheets from both said tables.

2. The combination in a printing press, of a type cylinder having two type forms, an impression cylinder, a feed table delivering sheets to the crown of the impression cylinder, and a second automatic feed table located under the first and nearly opposite the axis of the impression cylinder, said second automatic table being provided with means at its delivery end directing the sheets upwardly into parallelism with the cylinder, 40 and the cylinder having grippers adapted to take control of sheets from both said tables.

3. The combination in a printing press, of a type cylinder having two type forms, an impression cylinder, a feed table delivering sheets to the crown of the cylinder, a second feed table located under the first and nearly opposite the axis of the impression cylinder, said second table being provided with means 45 at its delivery end directing the sheets upwardly into parallelism with the cylinder, and the cylinder having grippers adapted to take control of sheets from both said tables, and a delivery located below the crown of the impression cylinder and on the side 50 thereof opposite the feed tables, and acting to draw off the sheets from both tables.

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