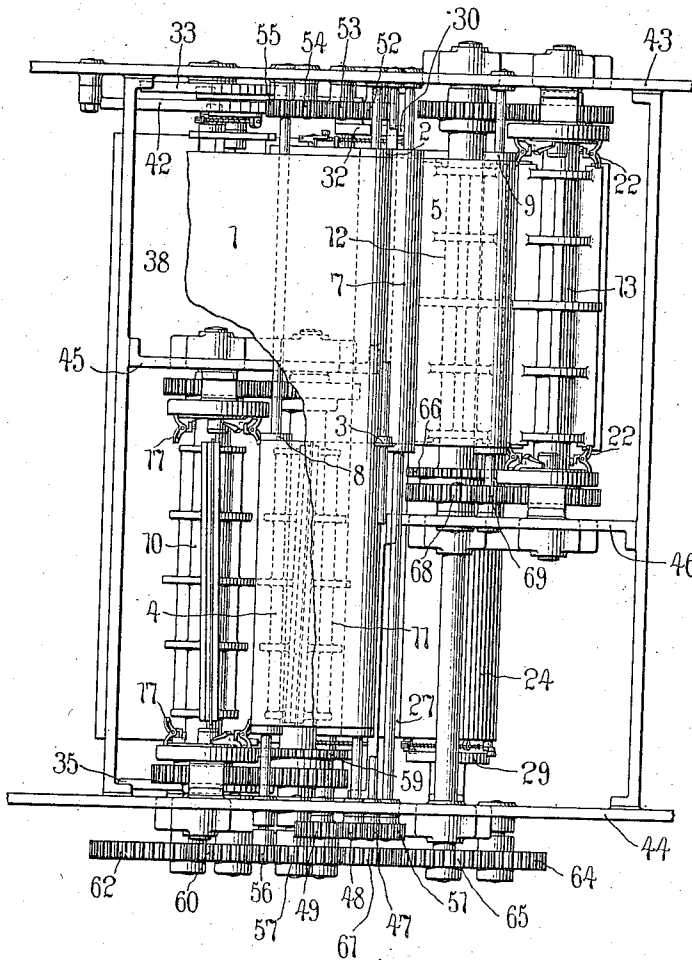


H. M. BARBER.  
 SHEET DELIVERY MECHANISM FOR PRINTING PRESSES.  
 APPLICATION FILED JUNE 20, 1916.

1,299,656.

Patented Apr. 8, 1919.  
 2 SHEETS—SHEET 1.

*Fig. 1.*



*Witness:*  
 Harry S. Fleischer

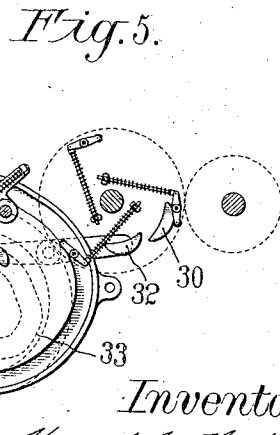
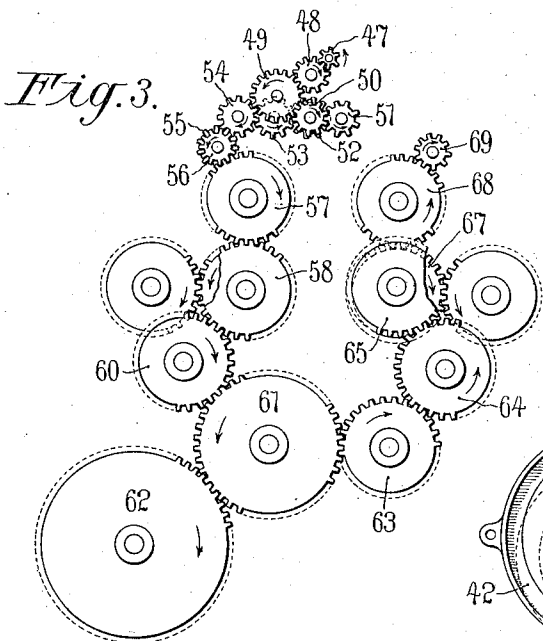
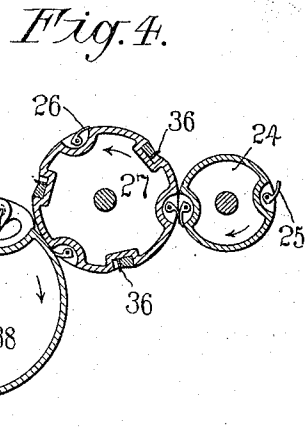
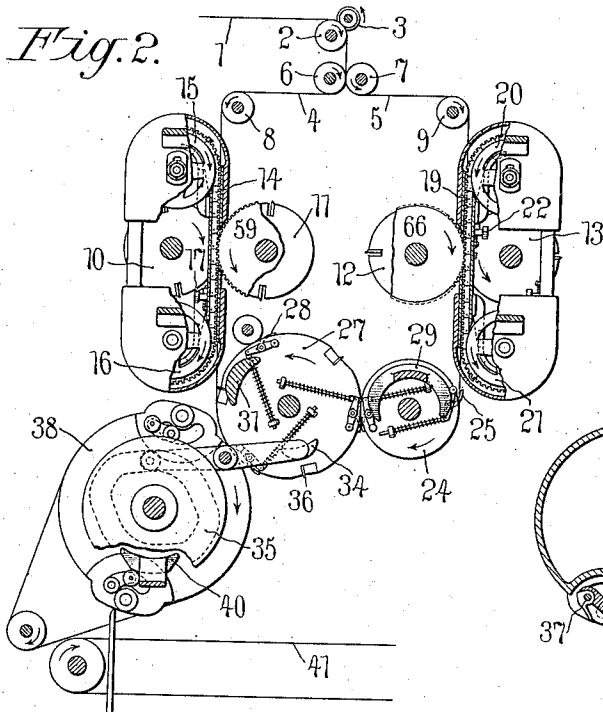
*Inventor:*  
 Edward M. Barber  
 by attorney  
 Thomas Edward

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Witness:  
 Harry S. Fleischer

Inventor:  
 Howard M. Barber  
 by attorney  
 Howard M. Barber

# UNITED STATES PATENT OFFICE.

HOWARD M. BARBER, OF STONINGTON, CONNECTICUT, ASSIGNOR TO C. B. COTTRELL & SONS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

SHEET-DELIVERY MECHANISM FOR PRINTING-PRESSES.

1,299,656.

Specification of Letters Patent.

Patented Apr. 8, 1919.

Application filed June 20, 1916. Serial No. 104,732.

*To all whom it may concern:*

Be it known that I, HOWARD M. BARBER, a citizen of the United States, and resident of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Sheet-Delivery Mechanism for Printing-Presses, of which the following is a specification.

In printing presses where very wide webs are printed, it has been found difficult to accurately cut the web transversely by a single cutting mechanism, as, for instance, by coacting rotary cutters; for the reason that it is almost impossible to keep the cutter blades from sagging. It has also been necessary to materially slow down the travel of the wide web to permit it to be cut as it passes through said cutters.

The principal object of this invention is to provide means for slitting the wide web into two or more narrow webs, to provide separate sheet cutting means for each narrow web, and to provide means for collecting groups of sheets cut from said narrow webs, fold said groups of sheets and deliver them.

The invention more particularly includes the provision of means for passing the narrow webs and the sheets cut therefrom, collected and folded, through the machine without lateral movement, the cutting devices for the narrow webs being of less length than the wide web and being arranged in different transverse planes, the collecting, folding and delivery mechanisms being of the full width of the wide web.

A practical embodiment of the invention is represented in the accompanying drawings, in which,

Figure 1 is a view in top plan of so much of a sheet cutting, collecting and folding machine as will give a clear understanding of the invention.

Fig. 2 is a vertical longitudinal section through the same.

Fig. 3 is a detail view of the gearing for driving the several parts.

Fig. 4 is a detail section showing the rotary carriers for transferring, collecting, folding and delivering the sheets, and

Fig. 5 is a detail section showing certain of the operating cams not shown in Fig. 2.

The wide web 1 is passed over a slitting roll 2, where it is slit longitudinally of its

travel into narrow webs, in the present instance two narrow webs, by a slitting disk 3. 55

The two narrow webs 4 and 5 then pass between the rolls 6 and 7, and the narrow web 4 is passed rearwardly and around the roll 8, while the narrow web 5 is passed forwardly and around the roll 9. 60

Two pairs of coacting rotary cutters 10, 11 and 12, 13, are arranged in different transverse planes, the cutters 10, 11, being used to cut sheets from the narrow web 4 and the cutters 12, 13, being used to cut sheets from the narrow web 5. These cutters are of less length than the width of the wide web 1, and are located in different transverse planes. 65

Means are provided for passing the narrow web 4 through the rotary cutters 10, 11, which means in the present instance, is shown as an endless carrier in which the side chains 14, which pass over the upper and lower sprockets 15, 16, are provided with side grippers 17, carried at intervals along the same, and arranged to grasp the side edges of the narrow web 4 before the web reaches the rotary cutters 10, 11, and carry the web through said rotary cutters. Similarly an endless carrier comprising the side chains 19, passing over the pairs of upper and lower sprockets 20, 21, and having the side grippers 22, is provided for carrying the narrow web 5 through the rotary cutters 12, 13. 70

A rotary sheet carrier 24 is provided with two sets of grippers 25 arranged to transfer the sheets cut from the narrow web 5 to successive sets of grippers 26 on the rotary sheet collecting and folding carrier 27. In the present instance the carrier 27 is shown as being provided with three collecting surfaces and three sets of grippers 26. Three sets of grippers 28 on the rotary sheet collecting and folding carrier 27, are arranged in alinement with the three sets of grippers 26, which sets of grippers 28 are arranged in the plane of the narrow web 4 and are operated to take the heads of the sheets cut from the narrow web 4. 80

A fixed cam 29 is arranged to control the operation of the two sets of grippers 25 on the rotary carrier 24, for grasping the sheet cut from the narrow web 5, and for releasing the head of said sheet as it is transferred to 85

its set of grippers 26 on the rotary carrier 27. A fixed cam 30 is arranged in position to control the operation of the sets of grippers 26 at the time of the transferring of the sheets from the grippers 25. A fixed cam 31 is arranged in position to control the operation of the grippers 28 for taking successive sheets cut from the narrow web 4.

The rotary carrier 27 is herein shown as a three-way collecting carrier arranged to collect two sheets cut from each of the narrow webs 4 and 5 on their respective alined surfaces and fold the same off to a rotary folding and delivery carrier to be hereinafter described.

A movable cam 32 controlled by a rotary cam 33, is arranged in position to control the operation of the grippers 26, to permit the folding off of the collected group of two sheets, in the present instance, cut from the narrow web 5. A movable cam 34 controlled by the rotary cam 35, is arranged to control the operation of the grippers 28 to permit the folding off of a collected group of two sheets cut from the narrow web 4.

The rotary carrier 27 is shown as provided with three folding blades 36 extending the full width of the wide web and located intermediate the alined sets of grippers 26, 27, which folding blades are arranged to coact with the sets of floating folding jaws 37 carried by the rotary sheet folding and delivery carrier 38, which also extends the full width of the wide web. A fixed cam 39 is provided for controlling the operation of the floating folding jaws at the time of the folding operation, and a fixed cam 40 is arranged in position to control the operation of the floating folding jaws to deliver the folded groups of sheets upon a suitable surface, as, for instance, the endless delivery carrier 41. The usual cam 42 is provided for controlling the floating of the folding jaws in the well known manner.

The side frames of the machine are denoted by 43, 44 and the intermediate short longitudinal frames by 45, 46. The rotary cutters 10 and 11 and the means for passing the narrow web 4 through the cutters are mounted between the side frames 44 and the intermediate frame 45. The rotary cutters 12 and 13 and the means for passing the narrow web 5 through the cutters are arranged between the side frame 43 and the intermediate frame 46, thus locating the cutters for the two narrow webs in different transverse planes. The rolls 2, 6 and 7 extend the full width of the wide web and the rolls 8 and 9 extend preferably only the width of their respective webs 4 and 5. The grippers 25 of the rotary transfer carrier 24, extend preferably only the width and in the plane of the narrow web 5, while the rotary carriers 27 and 38 and the endless delivery carrier 41 preferably extend the full width

of the wide web so as to properly handle the sheets cut from the narrow webs 4 and 5, collected and folded, side by side.

The shaft of the slitter 3 is geared to the shaft of the roll 2, through the gears 47, 48, and the shafts of the rolls 6, 7 and 8 are driven through the gears 49, 50, 51, 52, 53, 54, 55. The rotary cutters 10, 11, are driven through the gears 56, 57, 58. The endless carrier for feeding the web 4 through the cutters 10, 11; is driven from the gear 59. The rotary carriers 27 and 38 are driven through the gears 60, 61, 62. The rotary carrier 24 is driven from the carrier 27, through the gears 61, 63. The rotary cutters 12, 13, are driven through the gears 64, 65. The endless carrier for passing the narrow web 5 through the rotary cutters 12, 13 is driven through the gear 66. The roll 9 is driven through the gears 67, 68, 69.

From the above description it will be seen that by providing a separate cutting mechanism for each narrow web, the cutting mechanisms are kept within a convenient length for accurate and rapid severing of the sheets from the narrow webs.

It will also be seen that the narrow webs and the sheets cut therefrom, collected, and folded, may be passed through the machine without lateral movement.

It is evident that slight changes may be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein shown and described, but

What I claim is:

1. Means for slitting a wide web into narrow webs, separate sheet cutting devices for said narrow webs, means for collecting groups of sheets side by side, cut from said narrow webs, including a rotary carrier having alined sets of independently operating grippers, and means for folding said groups of sheets.

2. Means for slitting a wide web into narrow webs, separate sheet cutting devices for said narrow webs, means for collecting groups of sheets side by side, cut from said narrow webs, including a rotary carrier having alined sets of independently operating grippers, means for folding said groups of sheets, and means for delivering said folded groups of sheets side by side.

3. Means for slitting a wide web into narrow webs, separate pairs of rotary cutters of less length than the wide web, for cutting sheets from the narrow webs, a rotary sheet carrier of the full width of the wide web, having alined sets of independently operating grippers for collecting groups of sheets side by side cut from the narrow webs, a rotary delivery carrier and coacting folding devices on the collecting and delivery car-

riers for folding the groups of sheets and delivering them side by side.

4. Means for slitting a wide web into narrow webs, separate sheet cutting devices for said narrow webs, a combined rotary sheet collecting and folding carrier, a combined folding and delivery carrier, and a rotary

sheet transfer carrier, arranged to coact to collect groups of sheets cut from the narrow webs, and fold and deliver the same.

In testimony that I claim the foregoing as my invention, I have signed my name this 16th day of June, 1916.

HOWARD M. BARBER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."