

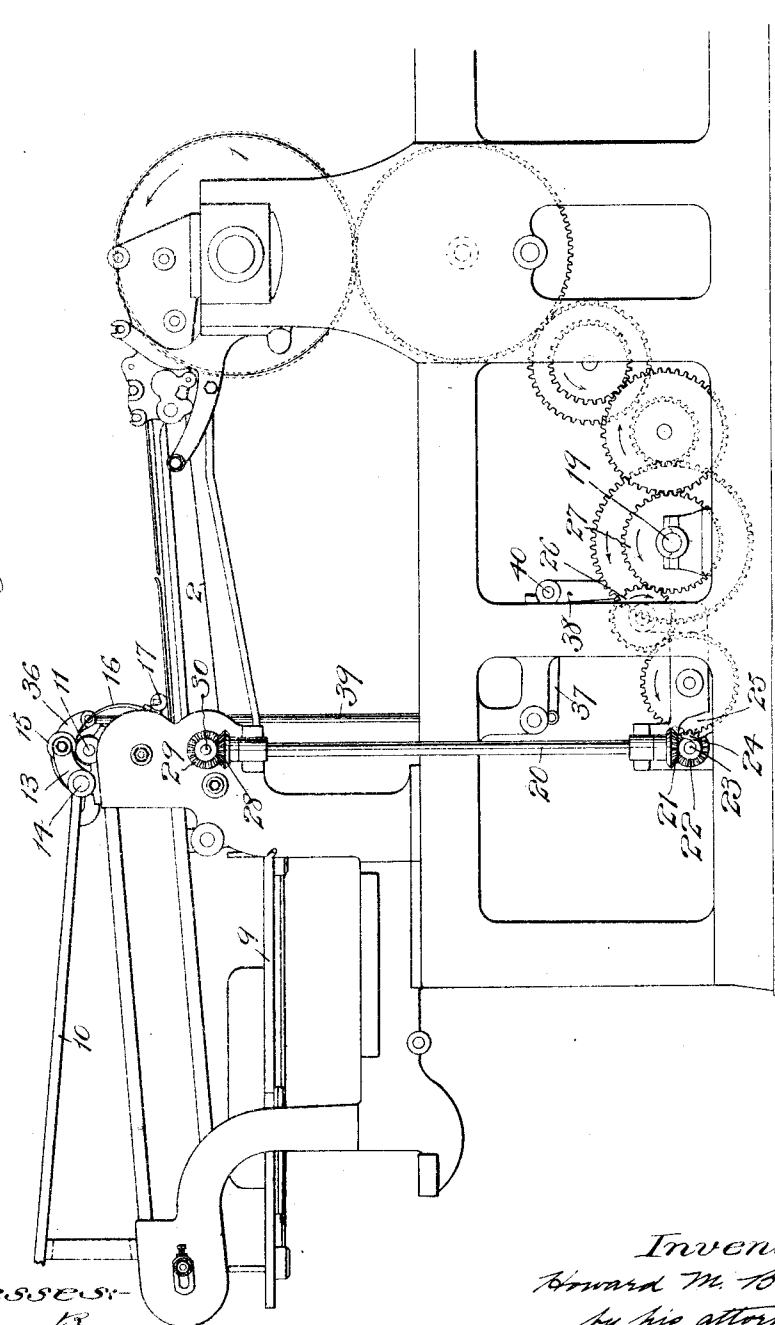
H. M. BARBER.
SLIP SHEET FEEDING DEVICE FOR SHEET DELIVERY MECHANISMS FOR PRINTING MACHINES.
APPLICATION FILED JULY 29, 1910.

1,064,275.

Patented June 10, 1913.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
George Barry.
Henry C. Whelan.

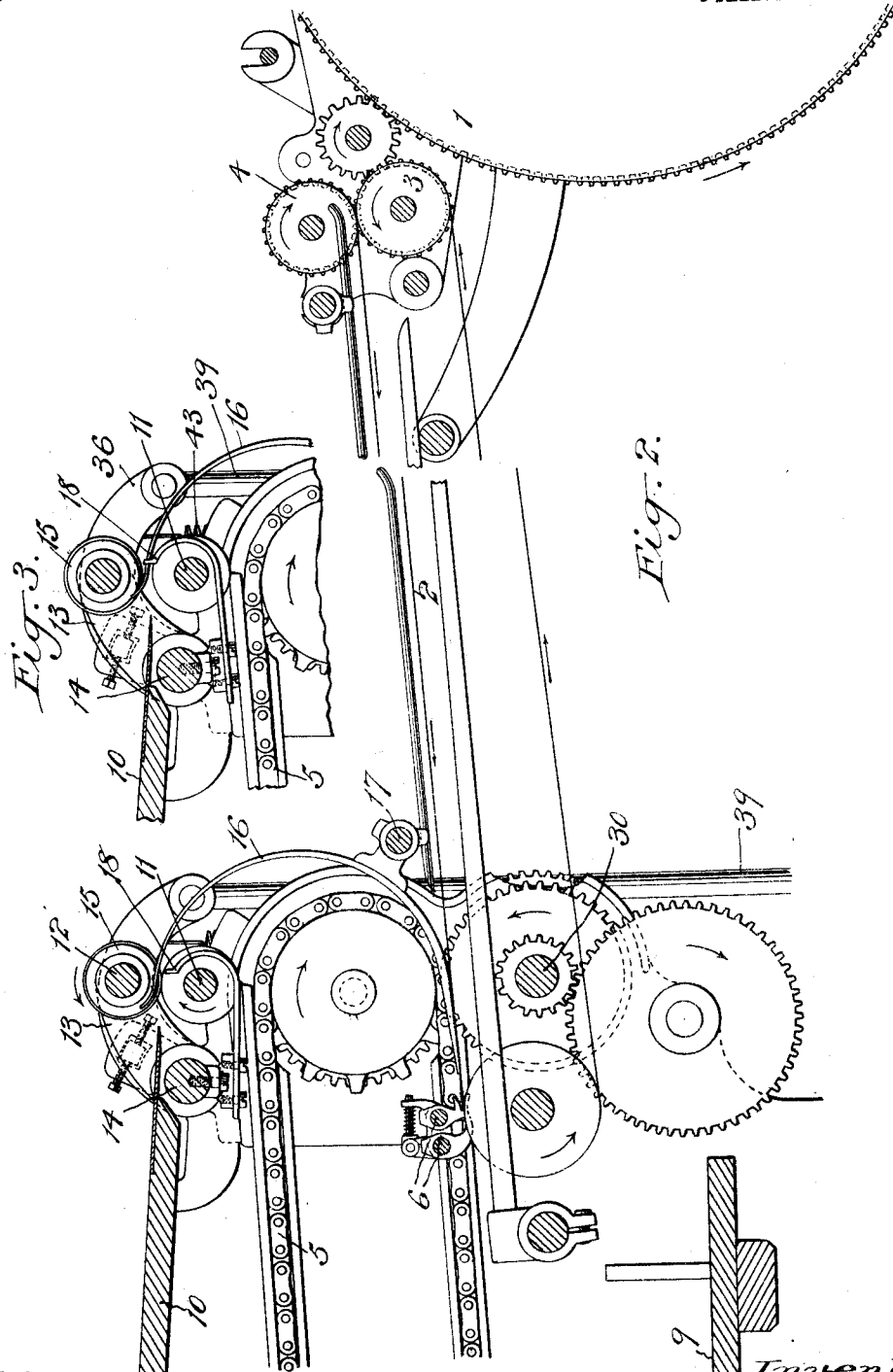
Inventor:
Howard M. Barber
by his attorneys
Brown & Seward

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

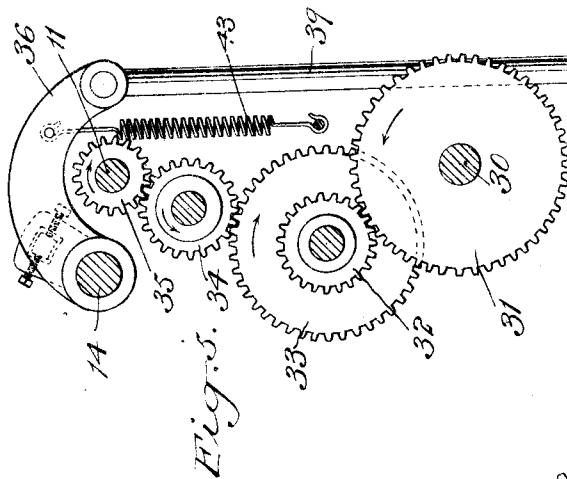


Fig. 5.

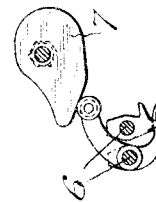


Fig. 4.

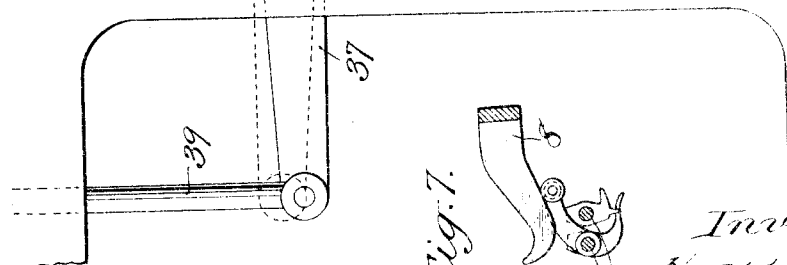
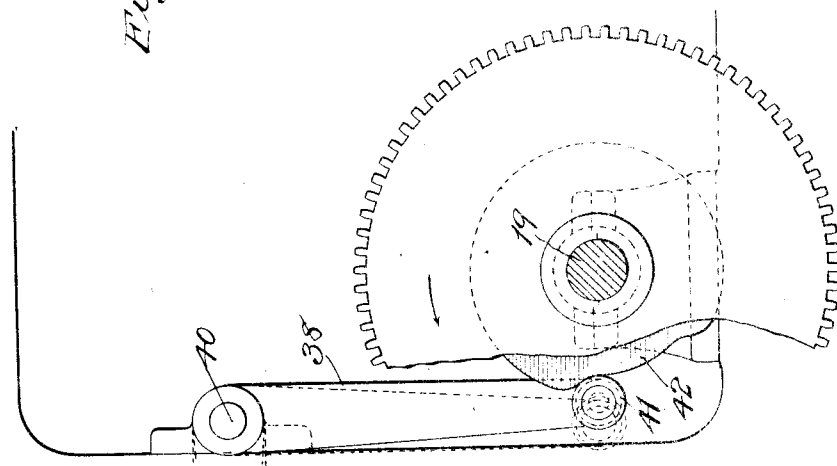


Fig. 7.



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J. George Barry,
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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 NEW JERSEY.

SLIP-SHEET-FEEDING DEVICE FOR SHEET-DELIVERY MECHANISMS FOR PRINTING-MACHINES.

1,064,275.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed July 29, 1910. Serial No. 574,487.

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 Slip-Sheet-Feeding Devices for Sheet-Delivery Mechanisms for Printing-Machines, of which the following is a specification.

10 The object of my invention is to provide a novel slip sheet feeding device for sheet delivery mechanisms for printing machines, the several parts of the device being so constructed, arranged and operated with respect on one another that the slip sheets will be accurately fed into position to be deposited upon the face of the printed sheets as they are delivered from the printing machine.

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

Figure 1 represents so much of a printing machine and its delivery mechanism with my improved slip sheet feeding device applied thereto as will give a clear understanding of the construction and mode of operation of my invention, Fig. 2 is an enlarged detail longitudinal vertical section through the same, the parts being in the position which they assume when the advance edges of a printed sheet and a slip sheet have been grasped by the endless delivery carrier grippers to be carried thereby into position to be deposited upon the sheet receiving table, Fig. 3 is a fragmentary section showing the position which the parts assume when the slip sheet stop and the drop rolls are in their raised position, Fig. 4 is a detail enlarged view showing the means for controlling the raising and lowering of the drop rolls, Fig. 5 is an enlarged detail section showing the geared connection for driving the slip sheet feed rolls, the drop roll operating lever also being shown, Fig. 6 is a detail view showing the cam for opening the grippers on the delivery carrier to receive the printed sheet and slip sheet, and Fig. 7 is a detail view showing the cam for opening the delivery carrier grippers for depositing the sheet upon the sheet receiving table.

The sheet delivery mechanism in connection with which I have chosen to illustrate my improved slip sheet feeding device is one which forms the subject matter of United States Letters Patent granted to C. P. Cottrell, No. 690,638, dated January 7, 1902, and only a general description thereof will be given herein.

The printed sheets are transferred from the impression cylinder 1 printed side up onto an endless sheet feeding tape carrier 2 through forwarding rolls 3, 4. This endless sheet feeding tape carrier 2 is adapted to feed the sheets to an endless sheet delivery carrier 5 having one or more sets of sheet receiving grippers 6. A cam 7 is arranged to open the grippers 6 at the proper time to receive the advance edge of a printed sheet fed by the carrier 2. A cam 8 is arranged in position to open the grippers 6 for releasing the advance edge of the printed sheet to permit the sheet to be deposited onto the sheet receiving table 9.

60 The slip sheet feeding device is constructed, arranged and operated as follows:—A slip sheet feed table 10 is located above the endless sheet delivery carrier 5. At the inner end of this slip sheet feed table 10 there is located a feed roll 11. Above this feed roll there is located a cross shaft 12 mounted in rock arms 13 fixed to a rock shaft 14, which shaft 12 is provided with drop rolls 15 arranged to be brought into and out of engagement with the feed roll 11. A slip sheet guide comprising a plurality of curved guide fingers 16 is fixed upon a cross shaft 17, the upper ends of which slip sheet guide fingers are located in spaces between the drop rolls 15 and the lower ends of which fingers are extended into position to guide the advance edges of the slip sheets into the grippers 6 on the endless sheet delivery carrier 5 when they are open to receive the advance edges of the printed sheets fed thereto by the sheet feeding endless tape carrier 2. A stop 18 for the advance edges of the slip sheets adjacent to the inner end of the feed table 10 is carried by the rock shaft 14, the arrangement of the stop 18 with respect to the drop rolls 15 being such that when the drop rolls are raised out of engagement with the feed roll 11, the stop 18 will be raised into position to engage the

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advance edge of a slip sheet and when the drop rolls are dropped down into engagement with the feed roll 11 the stop 18 will be dropped down out of the path of the slip sheet.

The feed roll 11 is driven from the cam shaft 19 as follows:—A vertical shaft 20 is provided with a bevel gear connection 21, 22, with a stud shaft 23, which shaft is driven from the shaft 19 through the spur gears 24, 25, 26, 27. The vertical shaft 20 is also provided with a bevel gear connection 28, 29, with a cross shaft 30, which cross shaft drives the feed roll 11 through the spur gears 31, 32, 33, 34, 35.

The drop rolls 15 are raised and lowered as follows:—An arm 36 is fixed to the rock shaft 14, which arm is connected to a rock lever 37, 38, by a rod 39. This rock lever 37, 38, is pivoted at 40 to the framing of the machine and the arm 38 is provided with a stud roller 41 which bears against the face of a cam 42 fixed to the cam shaft 19. A spring 43 tends to draw the drop rolls 15 down into engagement with the feed roll 11 and also holds the stud roller 41 against the face of the cam 42.

The parts of the slip sheet feeding device are so timed in their operations with respect to the printed sheet feeding mechanism, that as the advance edge of each printed sheet is presented to the grippers 6 on the endless sheet delivery carrier 5, the advance edge of a slip sheet will also be presented thereto so that the grippers 6 will convey a printed sheet and a superposed slip sheet outwardly in position to deposit the two sheets onto the sheet receiving table 9.

What I claim is:—

1. An endless sheet delivery carrier, means for feeding printed sheets from one source and means for feeding slip sheets from another source to the under side of the delivery carrier at the same time whereby the printed and slip sheets are associated together thereby.

2. An endless sheet delivery carrier having sheet receiving grippers, means for feeding a printed sheet from one source and means for feeding a slip sheet from another source to the said grippers at the same time when they are on the under side of the delivery carrier whereby the printed and slip sheets are associated together by said delivery carrier.

3. The combination with a sheet delivery mechanism for printing machines comprising an endless sheet delivery carrier and an endless tape carrier for feeding printed sheets to the under side of the delivery carrier, of a slip sheet feeding device arranged to feed slip sheets to the under side of the

endless delivery carrier to be associated with the printed sheets.

4. An endless sheet delivery carrier, means for feeding printed sheets to the under side of the delivery carrier and a slip sheet feeding device arranged above the endless sheet delivery carrier, comprising a curved sheet guide extending to the under side of the endless delivery carrier for directing the slip sheets thereto and means for feeding the slip sheets along said curved guide to the under side of said delivery carrier to be associated with the printed sheets.

5. An endless sheet delivery carrier having sheet receiving grippers, means for feeding printed sheets to said grippers when they are on the under side of the carrier, and a slip sheet feeding device arranged above the endless sheet delivery carrier, comprising a curved sheet guide, extending to the under side of the delivery carrier for directing the slip sheets into the grippers at the time the grippers are receiving the printed sheets and means for feeding the slip sheets along said curved guide to said grippers.

6. An endless sheet delivery carrier having sheet receiving grippers, means for feeding printed sheets to said grippers when they are on the under side of the carrier, and a slip sheet feeding device arranged above the endless sheet delivery carrier, comprising a curved sheet guide, extending to the under side of the delivery carrier for directing the slip sheets into the grippers at the time the grippers are receiving the printed sheets, a feed roll and a drop roll arranged to coact therewith for feeding the slip sheets along said curved guide to the said grippers.

7. An endless sheet delivery carrier having sheet receiving grippers, means for feeding printed sheets to said grippers when they are on the under side of the carrier, and a slip sheet feeding device arranged above the endless sheet delivery carrier, comprising a curved sheet guide, extending to the under side of the delivery carrier for directing the slip sheets into the grippers at the time the grippers are receiving the printed sheets, a drop roll, a sheet stop and means for bringing the drop roll and sheet stop alternately into and out of their operative positions.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this twenty seventh day of July A. D. 1910.

HOWARD M. BARBER.

Witnesses:

A. R. STILLMAN,
G. BEARDIDE.