

No. 885,383.

PATENTED APR. 21, 1908.

W. SCOTT, DEC'D.

I. & D. J. SCOTT, EXECUTORS.

DELIVERY MECHANISM.

APPLICATION FILED MAY 27, 1904.

4 SHEETS—SHEET 1.

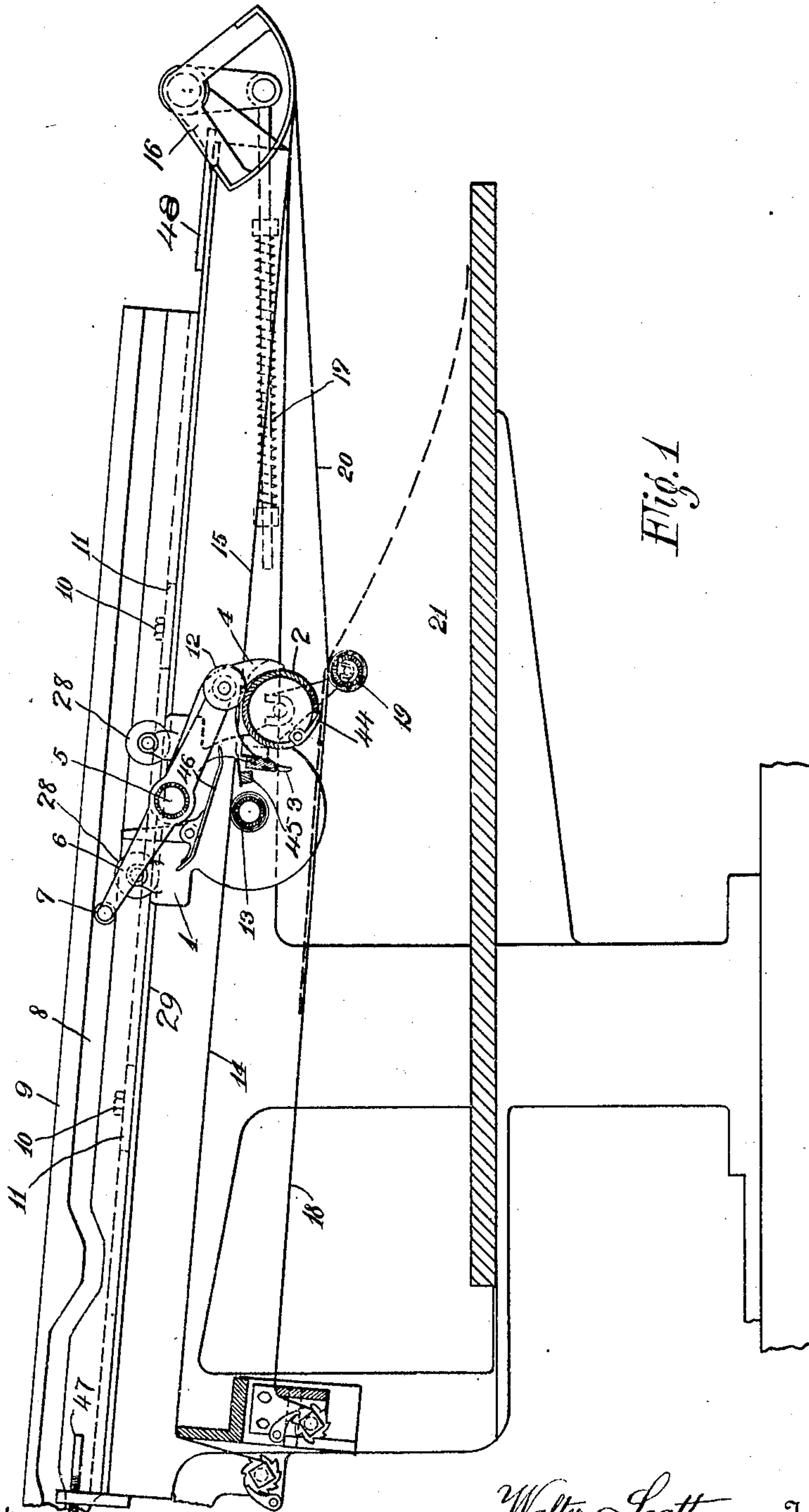


Fig. 1

Witnesses
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Walter Scott Inventor

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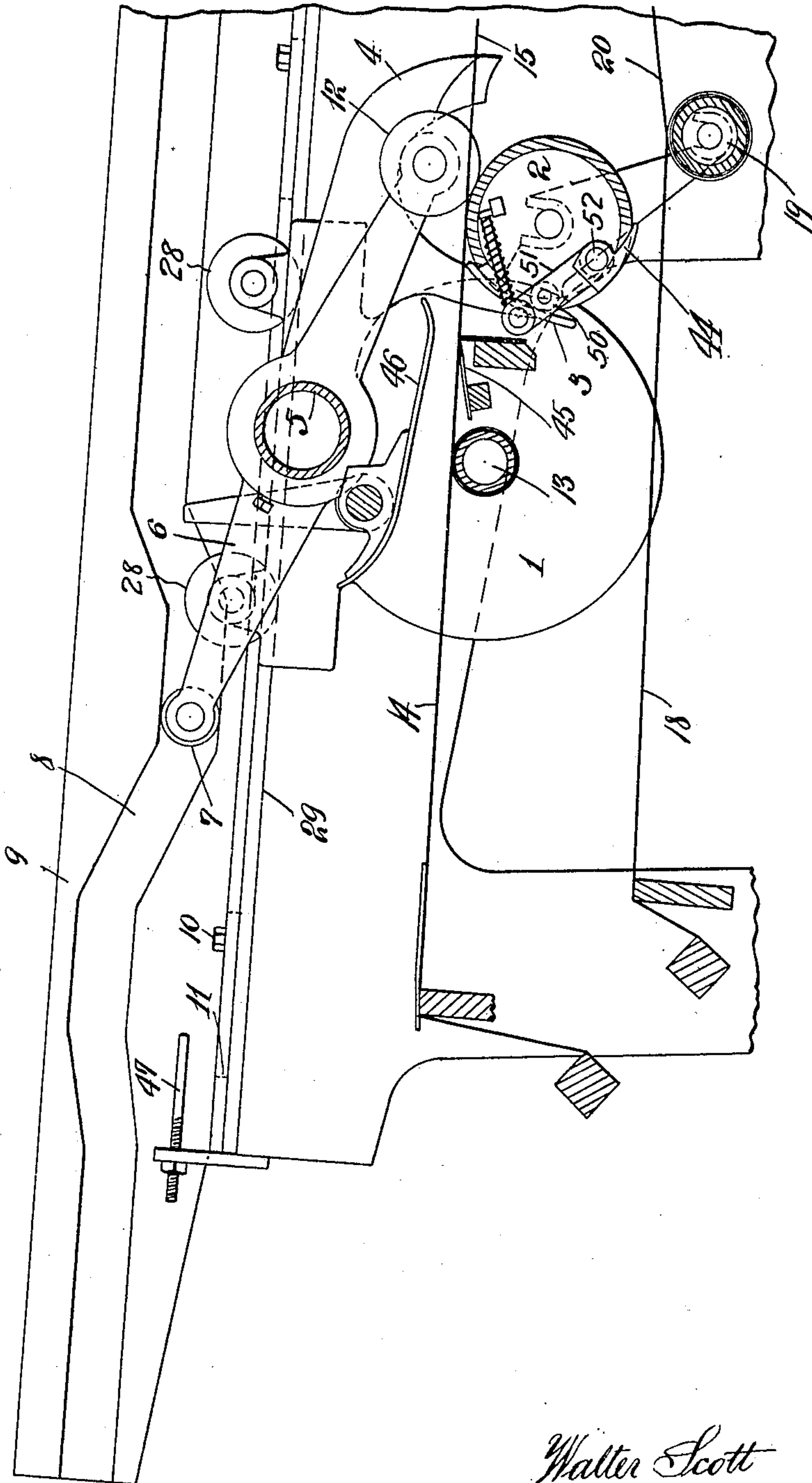
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4 SHEETS—SHEET 2.

Fig. 2



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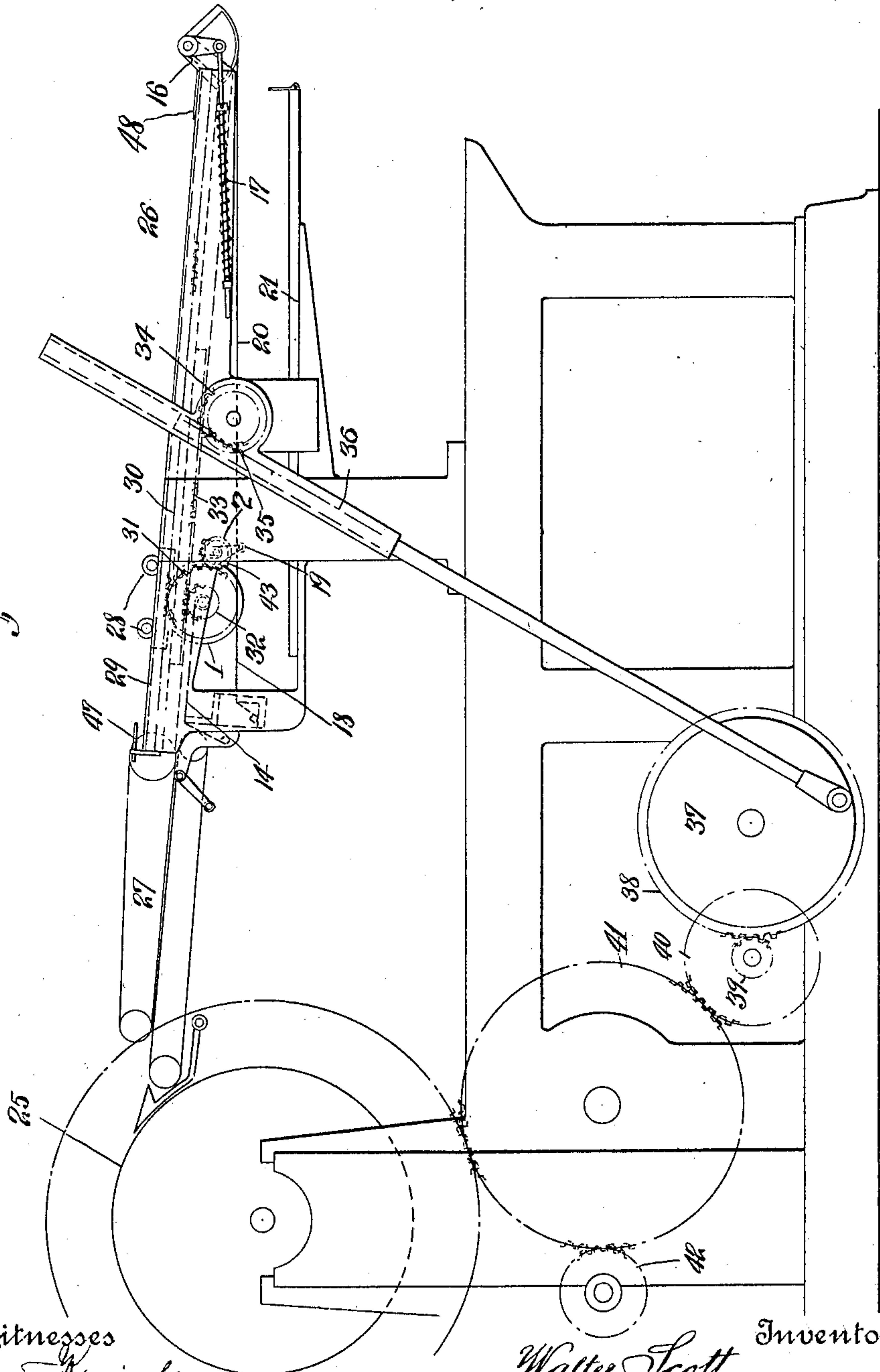
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4 SHEETS—SHEET 3.

Fig. 3



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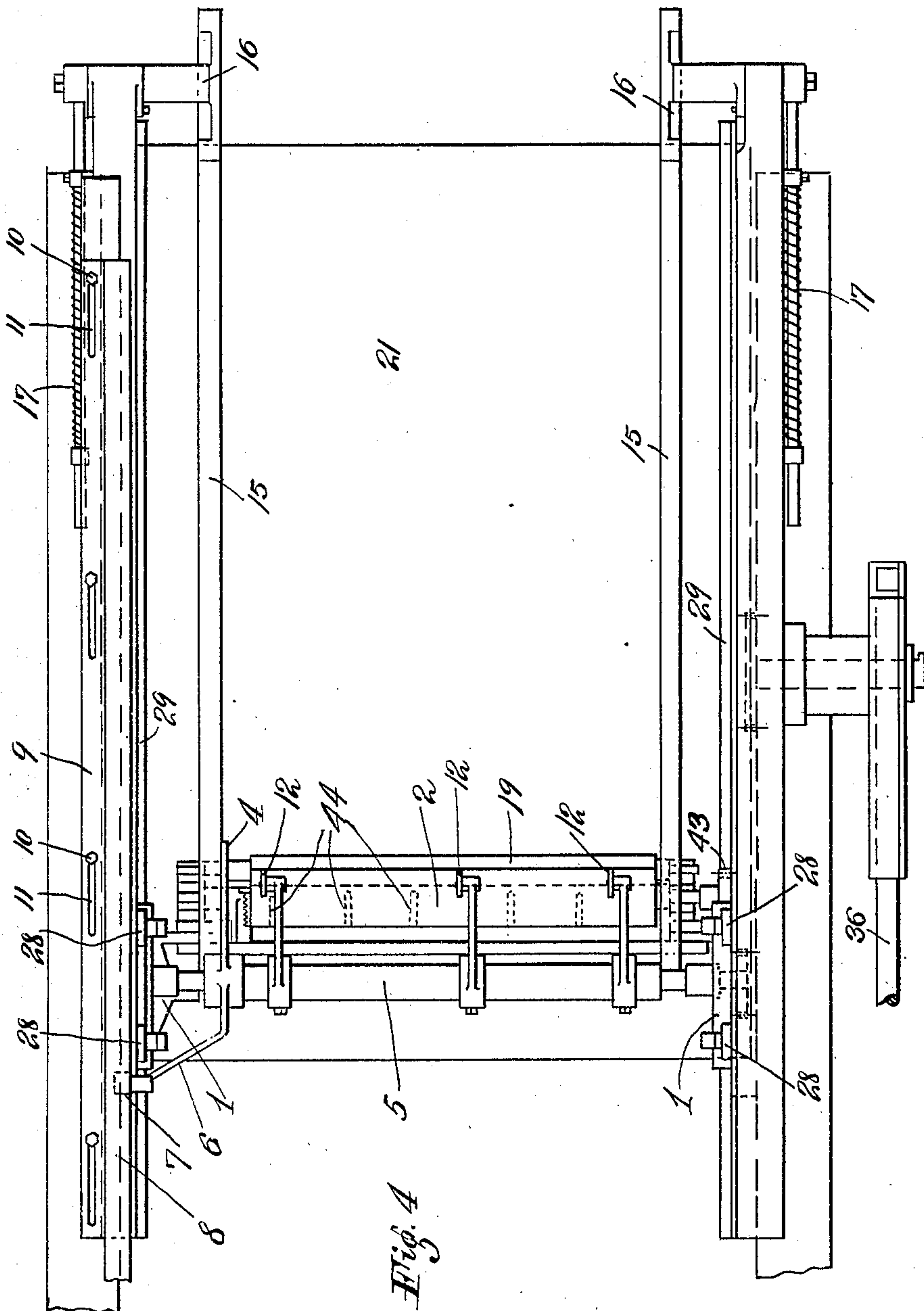


Fig. 4

WITNESSES

Frank H. H. H. H.
H. Sullivan

INVENTOR

Walter Scott

BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY; ISABELLA SCOTT AND DAVID JOHN SCOTT
EXECUTORS OF SAID WALTER SCOTT, DECEASED.

DELIVERY MECHANISM.

No. 885,383.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed May 27, 1904. Serial No. 210,014.

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States of America, and a resident of Plainfield, Union county, New Jersey, have invented certain new and useful Improvements in Delivery Mechanisms, of which the following is a specification.

My invention relates generally to delivery mechanisms for sheets of paper or other flexible material, and has more particular reference to sheet delivery mechanisms used in printing machines.

In an accompanying application filed by me on the 26th of May, 1904, Ser. No. 209,879, I show a delivery mechanism comprising essentially a reciprocating carriage having means for turning the sheet, a main collapsible apron or other sheet support upon which the sheet is supported as it is drawn out, and an auxiliary collapsible apron or other sheet support to the underside of which the sheet is fed before it drops on the delivery board.

The present application relates more specifically to the auxiliary apron or other sheet support mentioned, but instead of feeding the sheet to the underside of the said auxiliary apron, I feed it on top of the same during the forward stroke of the carriage, and deliver the sheet from the auxiliary apron or sheet support on the return stroke of the reciprocating carriage.

So far as the broad features of this invention are concerned, no particular construction of sheet turning means is necessary, though I prefer to use a rotating sheet turning gripping mechanism mounted on the reciprocating carriage.

In the accompanying drawing, I have shown my invention embodied in a suitable form, without, however, limiting myself to the exact structure shown.

In the said drawing: Figure 1 is a general view showing a conventional representation of a delivery mechanism similar to the one shown in the companion application hereinbefore referred to, embodying my invention. Fig. 2 is a detail view, partly in section, showing more particularly the construction of the sheet turning means. Fig. 3 is a side elevation of a printing machine showing the general application of my invention to a machine of this character.

Similar numerals of reference indicate corresponding parts on the different views.

25 indicates the impression cylinder of a

printing machine and 26 the delivery mechanism for the same. Interposed between said impression cylinder and the delivery mechanism are the tapes 27 or other means forming the sheet path for conveying the sheets. The delivery mechanism comprises essentially a reciprocating carriage 1, a rotating sheet turning gripping mechanism 2 moving with the said reciprocating carriage, and an auxiliary collapsible apron 18 whose function will be more particularly described later on.

Motion may be imparted to the carriage in any usual way; but the said carriage is preferably constructed as follows:—The carriage runs on the hangers 28 traveling on suitable rails 29. Fixed on the framework are two stationary racks 30 with which engage the gears 31 of the carriage 1 moving with the pinion 32 to which latter is imparted motion by the sliding racks 33 meshing with the gears 34 receiving their motion from the pinion 35 operated by the rack 36. The rack 36 is attached to the disk 37 receiving its motion through the gears 38, 39, 40, 41 and 42, the parts being so arranged that the reciprocating carriage makes one complete back and forth movement to every two revolutions of the impression cylinder. In other styles of machines, it will have one complete movement to each sheet printed, or if a collecting cylinder is used, one to every pack of sheets delivered. The rotating sheet turning gripper mechanism 2 is provided with gears 43 meshing with the gears 31 on the reciprocating carriage by means of which the said gripping mechanism is rotated continuously as the carriage travels back and forth. As the gripping mechanism is rotated continuously, it makes more than one revolution during the delivery of the sheet. Suitable mechanism is provided for opening the gripping mechanism during one of its revolutions; namely, usually the first revolution, taking the form of two cams 3 and 4 traveling with the reciprocating carriage, they being pivoted loosely on the shaft 5 of the said carriage. These cams are actuated by the friction roll 7 and arm 6; the said friction roll 7 engaging in the cam groove 8 of the actuating cam 9, adjustably secured on the framework by means of the bolts 10 and slots 11. The action of the cam 8 on the arm 6 causes the cams 3 and 4 to be alternately presented to the usual friction roll 50 on the lever 51 attached to the

gripper shaft 52 on which is mounted the spring seated gripper fingers 44. The gripper fingers 44 are first opened by the cam 4 to receive the sheet; and, after the leading edge of the sheet has been turned by the rotation of the member 2, they are opened again to release the sheet by means of the cam 3. Adjacent to the rotating gripping mechanism which is in the form of a cylinder having gripper fingers 44 there are provided one or more friction rolls 12 pivoted on the shaft 5 and between which and the rotating gripping mechanism the sheet is adapted to be fed out after being turned by the member 2. Moving with the carriage is a rotatable roller 13 adapted to draw out the main apron 14 on the forward stroke of the carriage. Suitable tension is imparted to this apron either by providing the roller itself with spring tension means or by the use of tension tapes as 15 wound on the roller in a direction opposite to that of the apron and attached to the rocking frame 16 having the spring tension means 17. The reciprocating carriage is further provided with the usual grippers as 45 and 46, the latter of which is adapted to be operated by the stops 47 and 48 in a well known manner for seizing and releasing the sheet when it is desired to deliver it with the printed side up. Any other means for turning the sheet could of course be used.

In order to deliver the sheets more easily and to better advantage on the delivery board, I find it useful to employ an auxiliary collapsible apron 18, wound on the auxiliary roller 19, located on the underside of the carriage and of the rotating gripping mechanism, the parts being so arranged that there is an intervening space between the said auxiliary roller and rotating gripping mechanism. The means for applying tension to the said auxiliary apron are, in the present instance, produced by tension tapes 20, wound on the auxiliary roller and attached to the rocking frame 16. Any other means can of course be applied for this purpose.

The sheet is fed to the rotating gripping mechanism in any suitable way and is seized by the latter at the proper point, the said sheet turning gripping mechanism seizing the leading edge of the sheet and turning it as the carriage moves forward. When the leading edge of the sheet has been turned, it is released by the gripping mechanism and the sheet fed out between the latter and the friction roll or rolls adjacent to the same, and onto the auxiliary apron. The unturned portion is meanwhile supported on the main apron. As the carriage returns, the sheet will be delivered from the said auxiliary apron onto the delivery board 21, as shown in the drawing.

What I claim is:

1. In a printing or other machine, the combination of a reciprocating carriage, an

auxiliary collapsible apron adapted to be drawn out on the forward stroke of the said carriage, and means for turning the sheet and feeding it on top of the said auxiliary apron.

2. In a printing or other machine, the combination of a reciprocating carriage, an auxiliary collapsible apron adapted to be drawn out on the forward stroke of the carriage, and means mounted on the said carriage for turning the sheet and feeding it on top of the said auxiliary apron.

3. In a printing or other machine, the combination of a reciprocating carriage, an auxiliary collapsible apron adapted to be drawn out on the forward stroke of the said carriage, of a rotating sheet turning gripper mechanism moving with the said carriage for feeding the sheet on top of the said auxiliary apron.

4. In a printing or other machine, the combination of a reciprocating carriage, a main collapsible apron adapted to be drawn out on the forward stroke of the carriage, and to support the sheet as it is drawn out, an auxiliary collapsible apron adapted to be drawn out on the forward stroke of the said carriage, and means for turning the sheet and feeding it on top of the said auxiliary apron.

5. In a printing or other machine, the combination of a reciprocating carriage, a main collapsible apron adapted to be drawn out on the forward stroke of the carriage, and to support the sheet as it is drawn out, an auxiliary collapsible apron adapted to be drawn out on the forward stroke of the carriage, and means mounted on the said carriage for turning the sheet and feeding it on top of the said auxiliary apron.

6. In a printing or other machine, the combination of a reciprocating carriage, a main collapsible apron adapted to be drawn out on the forward stroke of the carriage and to support the sheet as it is drawn out, an auxiliary collapsible apron adapted to be drawn out on the forward stroke of the said carriage, and a rotating sheet turning gripper mechanism moving with the said carriage for feeding the sheet on top of the said auxiliary apron.

7. In a printing or other machine, the combination of a reciprocating carriage having a sheet support, an auxiliary sheet support, movable with the said carriage, means for turning the sheet and feeding it on top of the said auxiliary sheet support on the forward stroke of the carriage, the auxiliary sheet support delivering the sheet on the return stroke of the carriage.

8. In a printing or other machine, the combination of a reciprocating carriage having a sheet support, an auxiliary sheet support movable with the said carriage, means mounted on the said carriage for turning the sheet and feeding it on top of the auxiliary sheet support on the forward stroke

of the carriage, the auxiliary sheet support delivering the sheet on the return stroke of the carriage.

9. In a printing or other machine, the
5 combination of a reciprocating carriage having a sheet support, an auxiliary sheet support movable with the reciprocating carriage, a rotating sheet turning gripper mechanism moving with the said carriage
10 for turning the sheet and feeding it on top of

the auxiliary sheet support on the forward stroke of the carriage, the auxiliary sheet support delivering the sheet on the return stroke of the carriage.

Signed at New York this 25th day of May 15 1904.

WALTER SCOTT.

Witnesses:

AXEL V. BEEKEN,
RAYMOND C. SPAULDING.