

(No Model.)

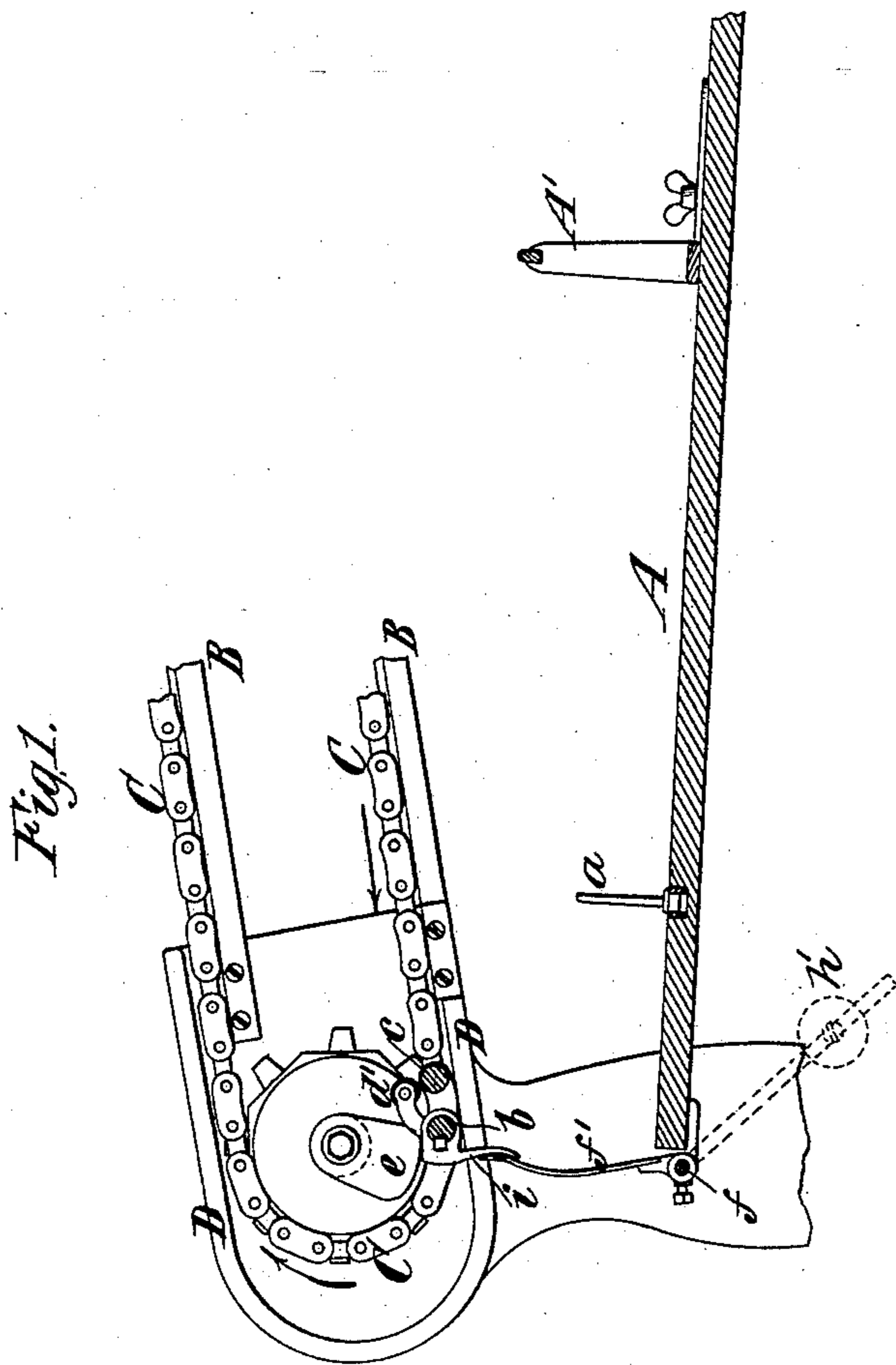
2 Sheets—Sheet 1.

C. B. COTTRELL.

SHEET STRAIGHTENER FOR SHEET DELIVERY APPARATUS OF PRINTING MACHINES.

No. 338,391.

Patented Mar. 23, 1886.



Witnesses:

Ol. Sundgren
Emil H. H. H.

Inventor:

Calvert B. Cottrell
by his Attys
Brown & Hall

(No Model.)

2 Sheets—Sheet 2.

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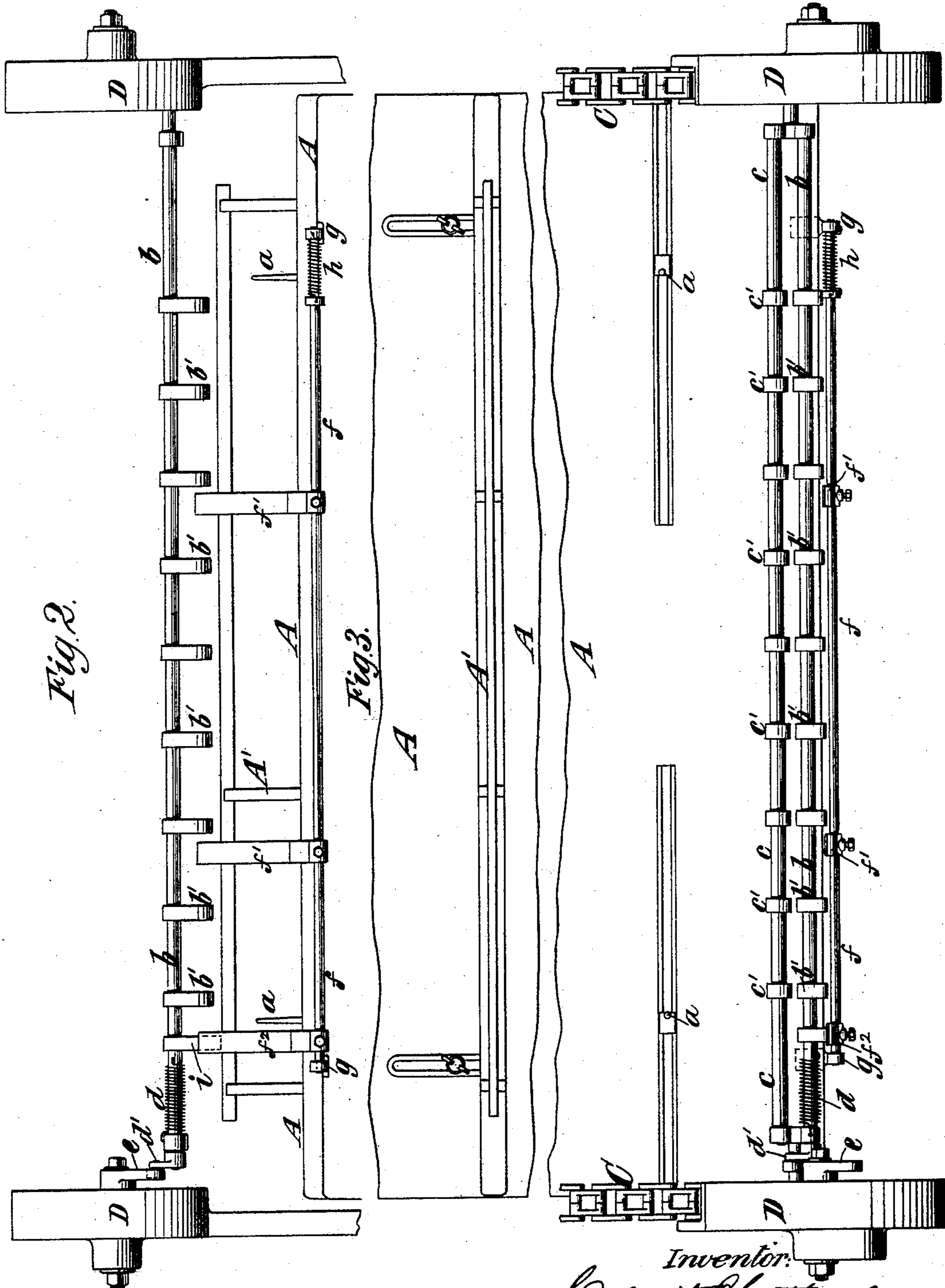


Fig. 2.

Fig. 3.

Witnesses:
O. Sundgren
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Inventor:
Calvert B. Cottrell
by his Attys
Brown & Hall

UNITED STATES PATENT OFFICE.

CALVERT B. COTTRELL, OF STONINGTON, CONNECTICUT.

SHEET-STRAIGHTENER FOR SHEET-DELIVERY APPARATUS OF PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 338,391, dated March 23, 1886.

Application filed August 15, 1885. Serial No. 174,479. (No model.)

To all whom it may concern:

Be it known that I, CALVERT B. COTTRELL, of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Sheet-Straighteners for the Sheet-Delivery Apparatus of Printing-Machines, of which the following is a specification.

My invention is intended for use in connection with sheet-delivery apparatus of the kind shown and described in my United States Letters Patent No. 319,460, dated June 9, 1885, and which consists, essentially, of endless chains having gripper-rods provided with delivery-grippers extending between them, the chains being arranged in front of the impression-cylinder and having a progressive movement, whereby they are enabled to take the printed sheet from the cylinder and to carry it over the ink-ing apparatus and deliver it upon the receiving-table arranged at the farther end of the press. In apparatus of this class the delivery-grippers are tripped or opened to deliver the sheet by means of a cam arranged adjacent to the table, and with which an arm on the gripper-rod comes in contact.

The object of my invention is to provide for evening or straightening the printed sheets as they are delivered one by one by delivery-grippers of the kind above described; and the invention consists in the combination, with a receiving-table provided with gages and an endless gripper-carrier for conveying sheets to and delivering them upon the table, of a sheet-evener arranged at the front of the table, and which is operated by the endless gripper-carrier as the latter travels to cause it to straighten or even the sheets against the gages on the receiving-table.

The invention also consists in novel features of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a receiving-table and a portion of the delivery apparatus having combined with them my improved devices. Fig. 2 is a front elevation of the parts embodying my invention, and Fig. 3 is a plan thereof.

Similar letters of reference designate corresponding parts in the several figures.

A designates the receiving-table, which is

arranged at the end of the press remote from the impression-cylinder and is secured to suitable supports. Upon this table is an adjustable gage, A', against which the sheets are straightened, and pins a, which constitute the gages for the side edges of the sheets.

B designates tracks or ways, and C endless chains, which are arranged to operate by a progressive motion in one direction, which will cause them, in their lower or direct travel from the cylinder, (not here shown,) to move in the direction indicated by the arrow in Fig. 1. These two chains are supported by chain-wheels arranged in housings D at the end of the tracks or ways B, and by similar chain-wheels arranged adjacent to the cylinder, and also not here shown.

Extending between the chains C are a gripper-rod and gripper-bar, b c, the former being provided with grippers or gripper-fingers b', closing upon gripper-rests c' on the bar c. The grippers are closed to grip the sheet by the action of the usual gripper-closing spring, d, and as the sheet reaches the table A an arm, d', on the rod b is brought in contact with a cam, e, and the grippers are tripped or opened to drop the sheet upon the table A.

The sheet evener or straightener here represented consists of a rod, f, fitted to turn in bearings or eyes g at the front edge of the table A, and provided with fingers or arms f', which project upward above the table.

The rod f, as here shown, is actuated to carry the fingers or arms f' inward toward the table by a spring, h, and f² designates an arm, which also projects upward from the rod f, and which may consist of one of the fingers which project upward on the rod.

Upon the gripper rod or bar b or c is a projecting arm or cam, i, and soon after the arm d' strikes against the cam e to open the grippers the cam i comes against the arm f² and turns the rod f in a direction to carry the fingers f' outward from the edge of the table A. As soon as the cam i releases the arm f², the spring h returns the rod and fingers f' to their former position, and by striking against the front edge of the sheet they push the latter inward and even or straighten it against the gage A', so as to cause the delivery of the sheets in an even pile.

In lieu of the spring h, I may employ a weight,

h', on an arm projecting from the rod *f*, as shown by dotted lines in Fig. 1, and this weight is the equivalent of the spring.

The two chains constitute an endless gripper-carrier.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a receiving-table provided with gages, and an endless gripper-carrier for conveying sheets to and delivering them upon said table, of a sheet evener or straightener arranged at the front of the table and operated by the endless gripper-carrier to cause it to straighten or even the sheets on the table, substantially as herein described.

2. The combination, with a receiving-table

provided with gages, and an endless gripper-carrier for conveying sheets to and delivering them upon the table, of a sheet evener or straightener consisting of a rod provided with fingers projecting therefrom to strike the front edge of a sheet, a spring or equivalent weight for turning the rod to throw the fingers inward toward the table, and an arm through which the gripper-carrier acts on the rod to throw the fingers outward from the table, substantially as herein described.

CALVERT B. COTTRELL.

Witnesses:

HENRY T. BROWN,

FREDK. HAYNES.