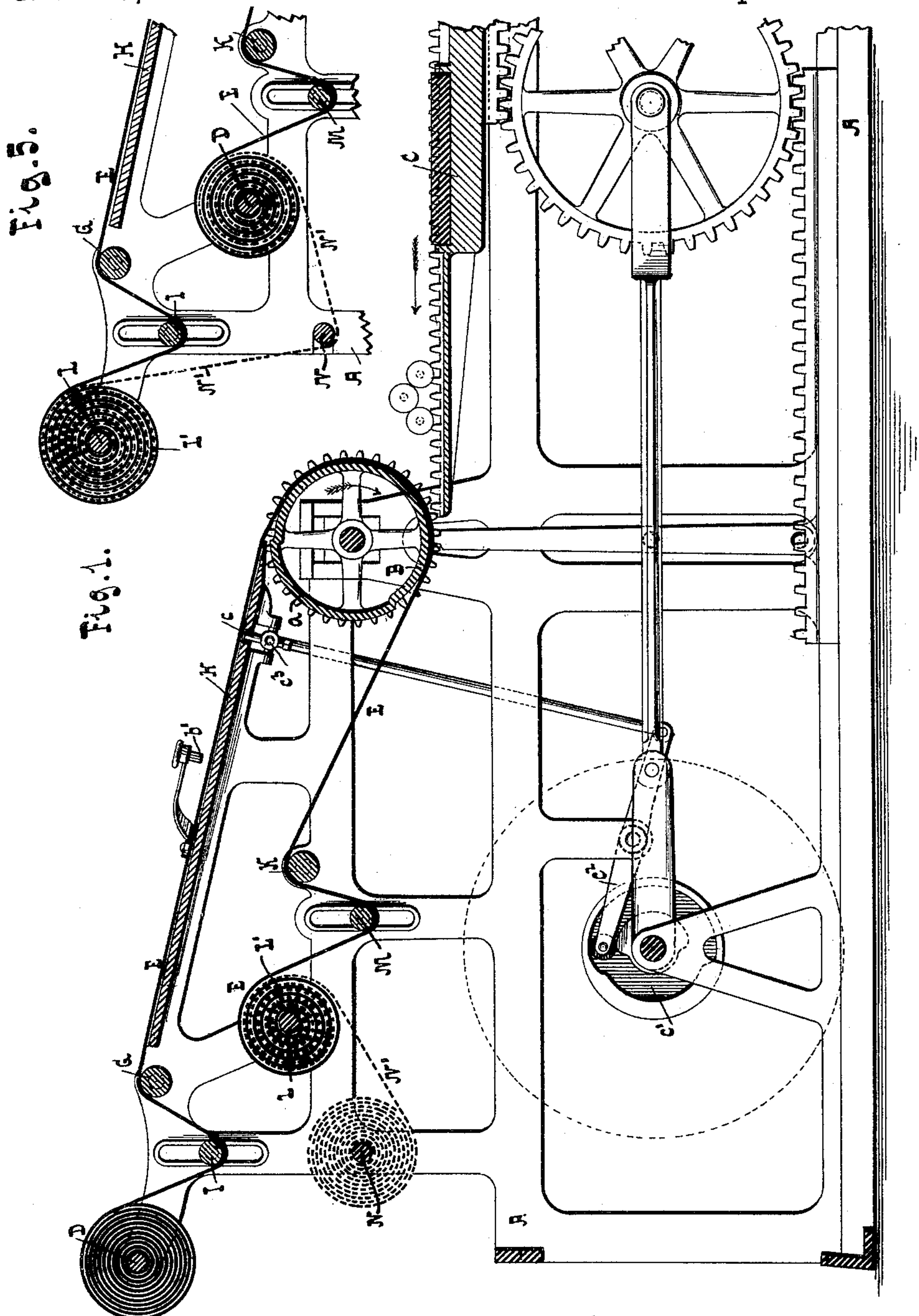


2 Sheets—Sheet 1.

No. 410,521.

Patented Sept. 3, 1889.



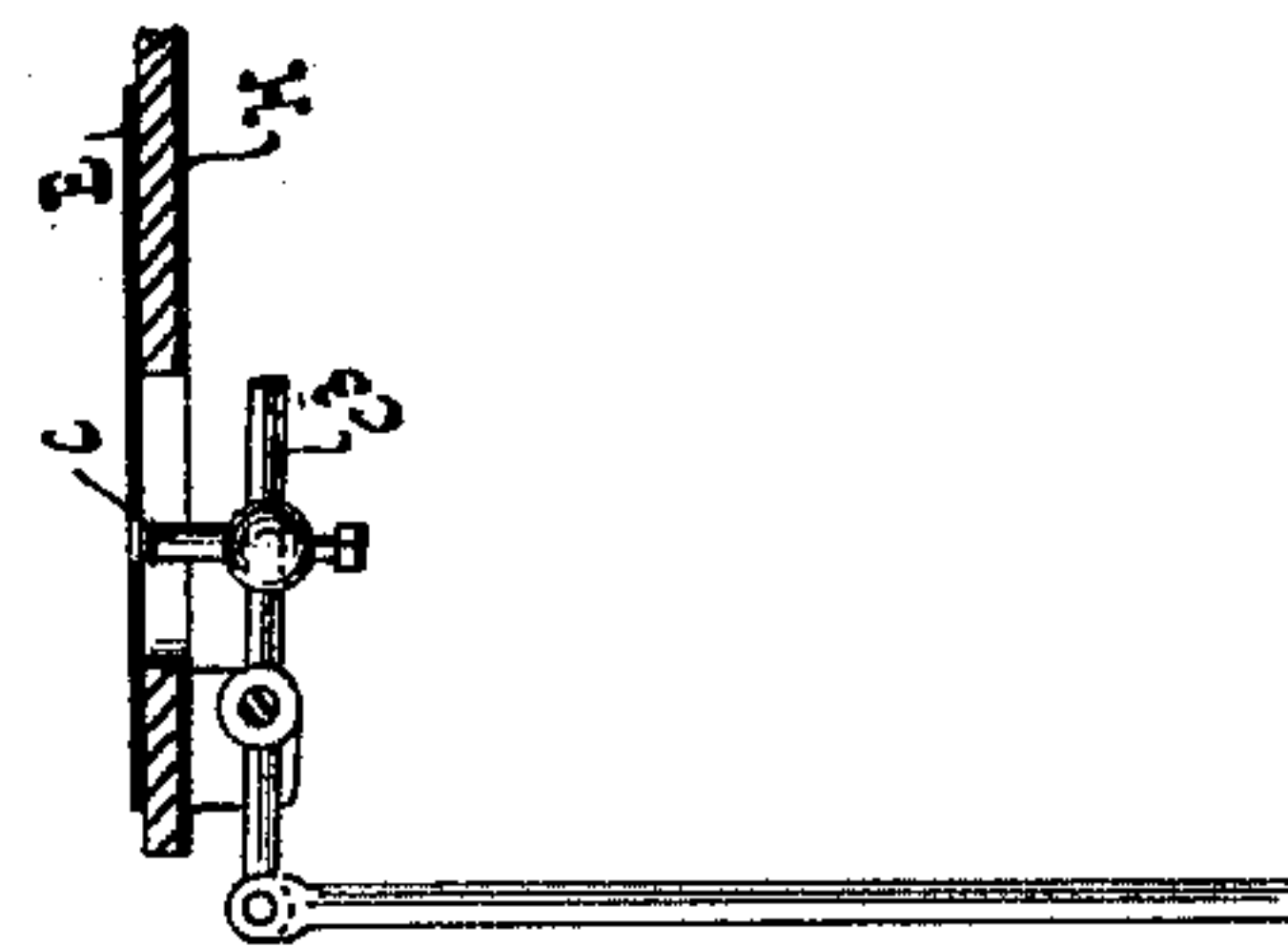
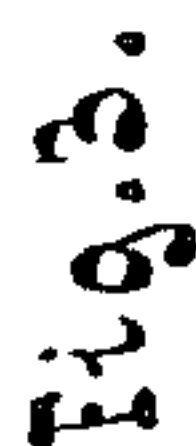
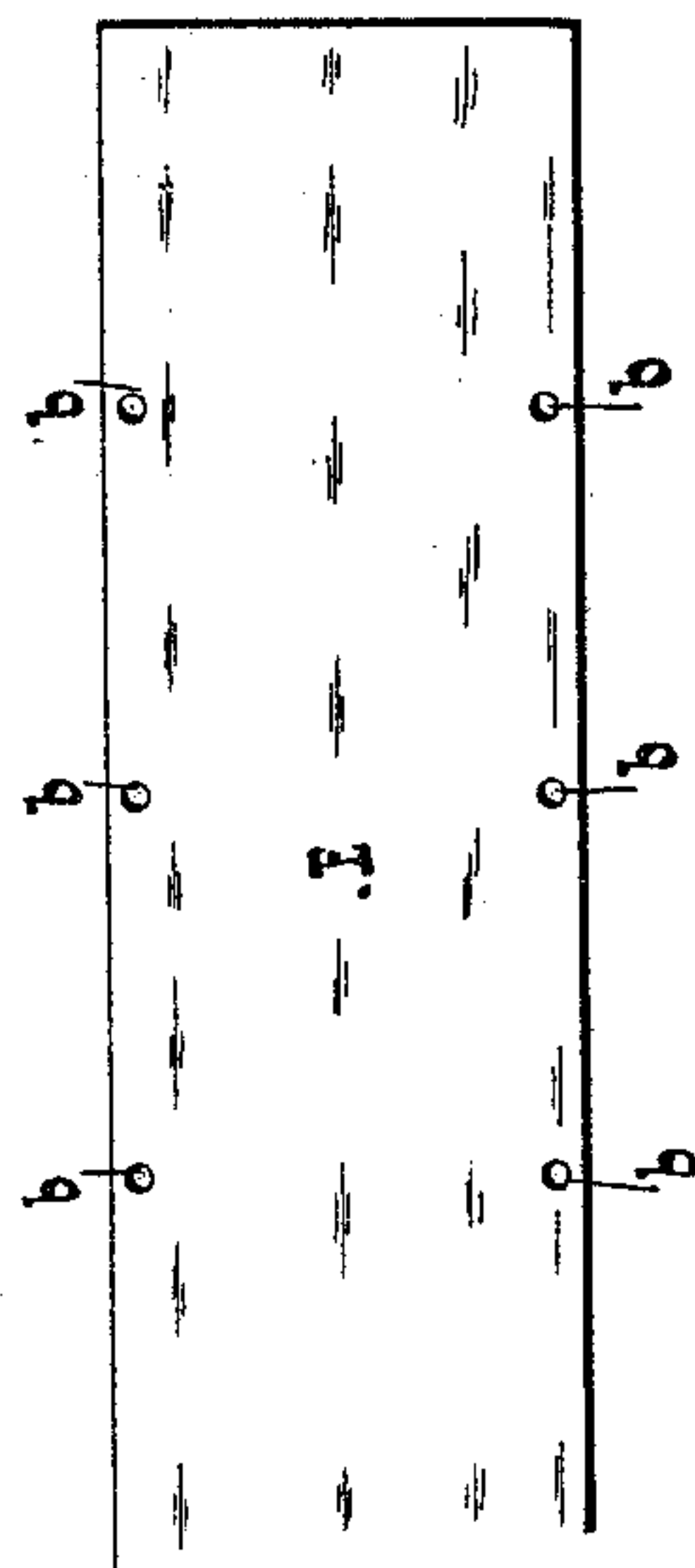
WITNESSES:  
*Attest: du Puy*  
*William Miller*

INVENTOR  
Gustav L. Jaeger.  
BY  
Van Santvoord & Hauff  
his ATTORNEYS

2 Sheets—Sheet 2.

No. 410,521.

Patented Sept. 3, 1889.



**WITNESSES:**

Attesté du Faurf.  
William Miller

***INVENTOR***

Gustav L. Jaeger.

BY

BY  
Van Santvoord & Hauff

*This* ATTORNEYS



# UNITED STATES PATENT OFFICE.

GUSTAV L. JAEGER, OF NEW YORK, N. Y.

## METHOD OF PRINTING.

SPECIFICATION forming part of Letters Patent No. 410,521, dated September 3, 1889.

Application filed August 2, 1888. Serial No. 281,771. (No specimens.)

*To all whom it may concern:*

Be it known that I, GUSTAV L. JAEGER, a citizen of the United States, residing at New York, in the county and State of New York, have invented a new and useful Method of Printing, of which the following is a specification.

The object of this invention is to produce on a continuous web a series of successive impressions which register with each other, so that many-colored prints can be produced in a comparatively short time.

The lithographic press which I use in carrying out my invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section in the plane  $xx$ , Fig. 2. Fig. 2 is a plan or top view. Fig. 3 is a transverse vertical section in the plane  $yy$ , Fig. 2. Fig. 4 is a face view of a portion of the web. Fig. 5 is a detached section of the delivery and the take-up rollers while the web is passed through the printing apparatus for the second time.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the frame of a lithographic or printing press of well-known construction. B is the impression-cylinder, and C is the reciprocating bed or table which carries the stone. The press is of that construction known as "stop-cylinder" press—that is to say, the impression-cylinder makes a complete revolution during the forward stroke of the bed and it remains stationary during the return-stroke of said bed.

D is a roller on which the web E is wound. The web passes over a guide-roller G and feed-table H, and it is subjected to the action of a tightening-roller I.

On taking the first impression the forward end of the web must be placed upon the high portion  $a$  of the impression-cylinder and held there until it is caught by the bed C, and then the web is drawn forward by the co-operation of the bed and of the impression-cylinder; but after the press has been fairly started the web passes from the impression-cylinder over the guide-roller K to the winding-up roller L, being kept taut by the gravitating roller M. N' is the laying-in sheet.

In the position which the working parts of the press occupy in the drawings, the bed is

just ready to begin its forward stroke, and during this forward stroke the impression-cylinder is caused to rotate in the direction of the arrow marked on it in Fig. 1. The web remains stationary until it is caught between the high portion  $a$  of the impression-cylinder and the stone or printing-surface supported by the bed C, and while it receives the impression it is carried forward, so as to bring a fresh portion in position to receive the next impression.

In order to bring the successive impressions to register, (which is indispensable, for instance, in making many-colored lithographic prints,) it is necessary to adjust the web after each impression in the proper registering position, since the portions of the web drawn out by the co-operation of the bed and of the impression-cylinder at the successive impressions are not of uniform length. In order to be able to adjust the web after each impression in the proper registering position, I provide the same with marks  $b$ , Fig. 4, and the feed-table H is also provided with suitable marks  $c$ , and after each impression I bring two of the marks  $b b$  on the web in juxtaposition with the marks  $c c$  on the feed-table, and thereby adjust said web in the proper registering position. The marks  $b b$  on the web are preferably made in the form of holes or perforations, as shown in Fig. 4, and these holes or perforations may be made before the web is introduced into the press, or they may be produced by punches  $b' b'$  as the web passes over the feed-table; and in order to lock the web in the proper registering position I make the marks  $c$  of the feed-table in the form of pins, to which a rising-and-falling motion is imparted by a cam  $c'$  and levers  $c^2 c^3$ , Figs. 1 and 3, so that they engage the holes or perforations of the web when the same has been moved into the proper registering position.

As the web receives the successive impressions in the manner above described and is being wound up upon the take-up roller L, the laying-in sheet N' is drawn off from its roller N, placed against the printed surface of the web, and wound with the same upon the roller L, forming the compound roll L'. After the entire web has passed through the printing apparatus, the roller D is removed from its



bearings and replaced by the roller L, carrying the compound roll L', and the roller D is placed into the bearings previously occupied by the roller L. (See Fig. 5.) Then the web  
5 is drawn off from the compound roll L' and passed through the printing apparatus to receive the second series of impressions. After having received these impressions, the web is wound up upon the roller D, its freshly-  
10 printed side being protected by the laying-in sheet N', which is drawn from the compound roll L' and wound upon the roller D, together with the web, as indicated in Fig. 5.

After or while receiving the final impression, the web may be cut or severed into sheets, strips, or pieces.

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

1. The method of producing successive impressions on a continuous web, which consists in drawing the web from the roller on which it has been wound by the co-operation of the impression-cylinder and of the bed during the forward stroke of the bed, holding the  
25 impression-cylinder stationary during the return-stroke of the bed, and adjusting the web in the proper registering position previous to the next movement of the impression-cylinder, substantially as described.

2. The method of producing successive impressions on a continuous web, which consists in drawing the web from the roller on which it has been wound by the co-operation of the impression-cylinder and of the bed during  
35 the forward stroke of the platen, holding the impression-cylinder stationary during the re-

turn-stroke of the bed, providing the web with registering holes or perforations, and bringing these in engagement with suitable registering projections previous to the next  
40 movement of the impression-cylinder, substantially as described.

3. The method of producing successive impressions on a continuous web, which consists in drawing the web from a roller and producing  
45 the first impression by the coaction of an impression-cylinder and a bed, and then adjusting the web to bring registering marks thereon into coincidence with other registering marks prior to producing the next im-  
50 pression, substantially as described.

4. The method of introducing a laying-in sheet, which consists in drawing the same from a roller and winding it up upon another  
55 roller, together with the freshly-printed web, then changing the position of the compound roll containing the printed web and the laying-in sheet, and passing the web from said compound roll through the printing apparatus  
60 for a second series of impressions while the laying-in sheet is drawn from the compound roll and wound up for the second time with the web after the latter has passed for the second time through the printing apparatus,  
65 substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

GUSTAV L. JAEGER. [L. s.]

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.