

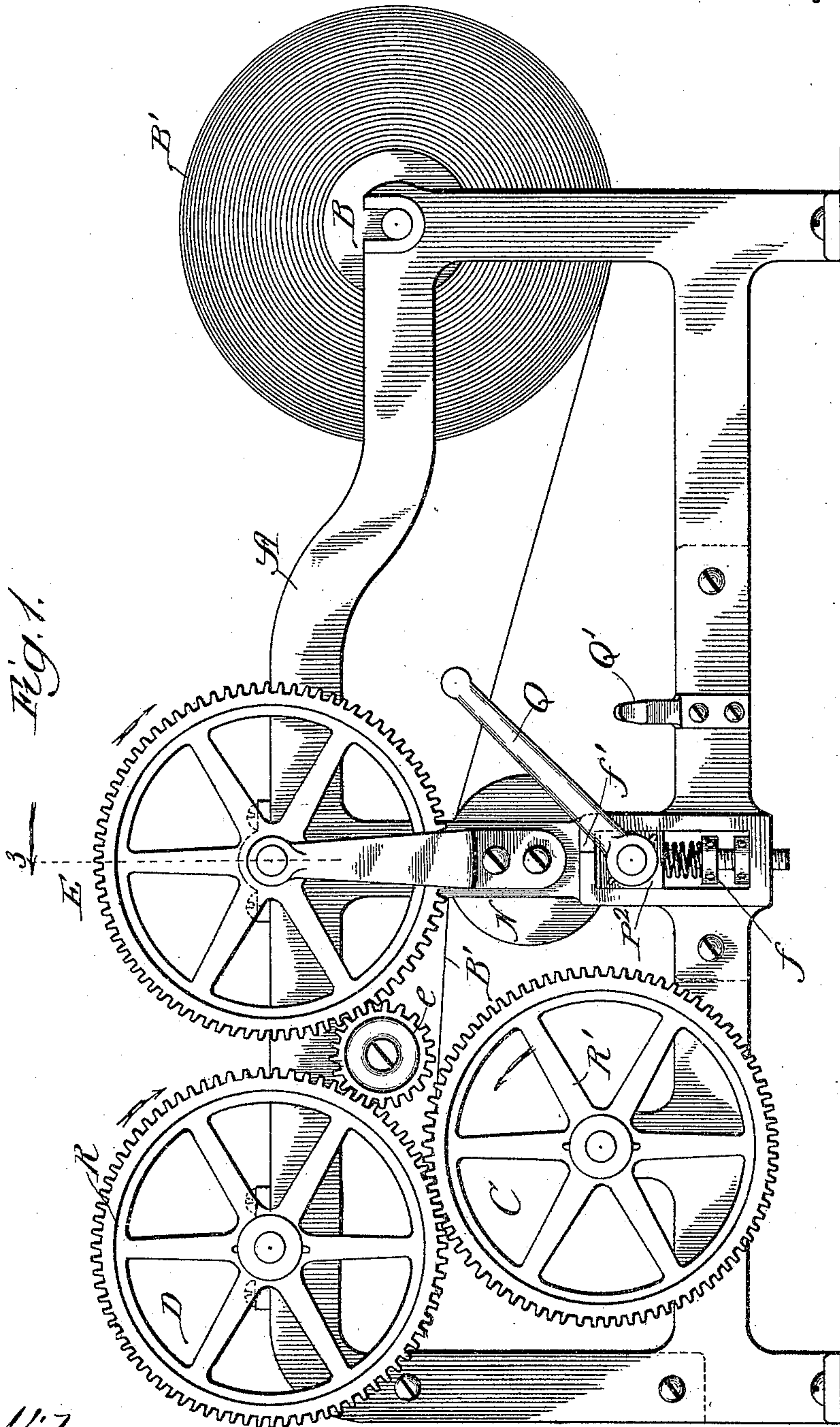
(No Model.)

4 Sheets—Sheet 1.

A. C. THOMAS & C. M. HAMILTON.
ROTARY STENCILING MACHINE.

No. 604,506.

Patented May 24, 1898.



Witnesses:
E. S. Daylord
L. L. Allen

Inventors:
Addison C. Thomas and
Cassius M. Hamilton.
By Dyerforth and Dyerforth
Attys.

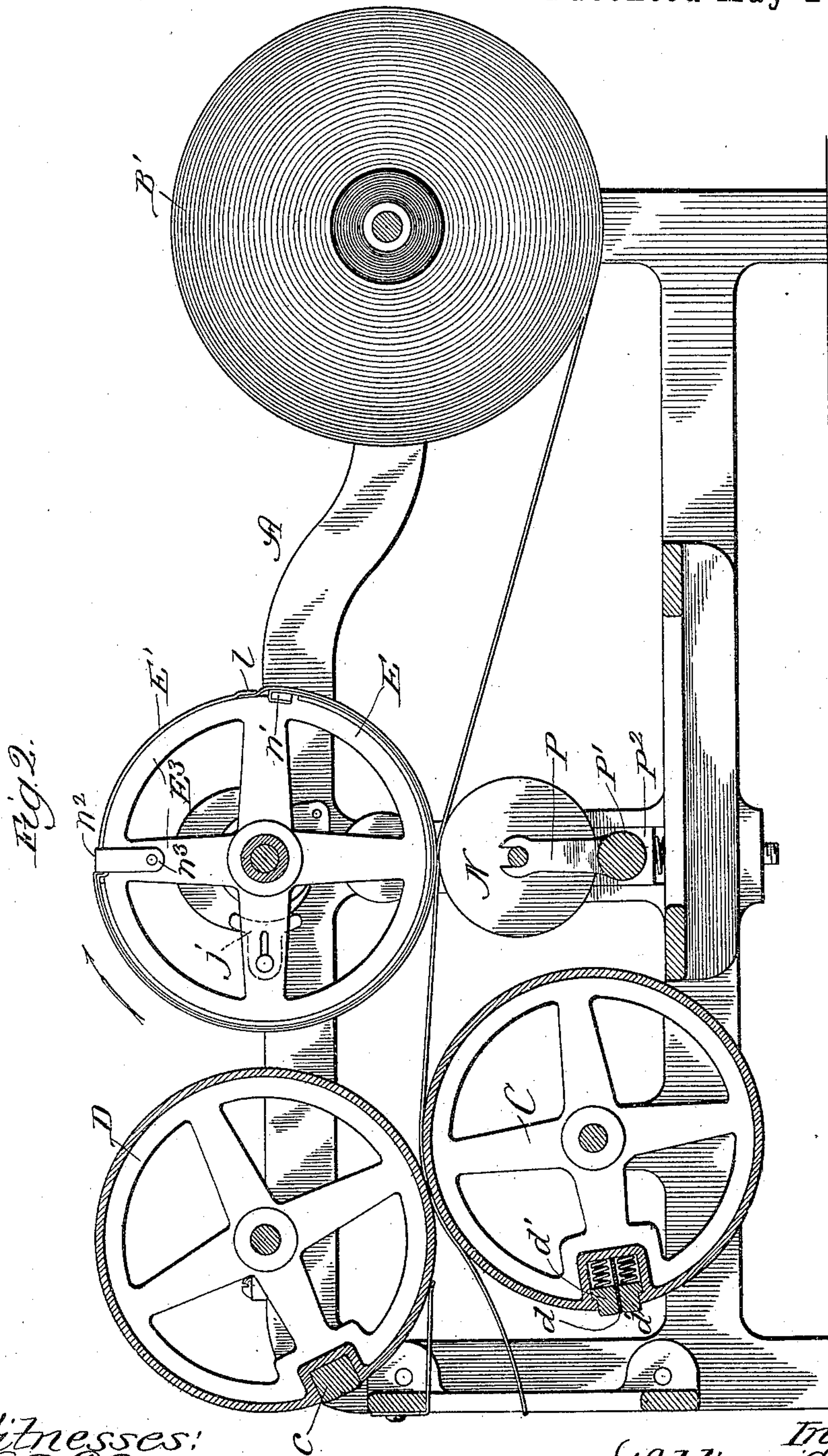
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A. C. THOMAS & C. M. HAMILTON.
ROTARY STENCILING MACHINE.

No. 604,506.

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Witnesses:
Eas & Gaylord,
Lester L. Allen.

Inventors:
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Attorneys.

(No Model.)

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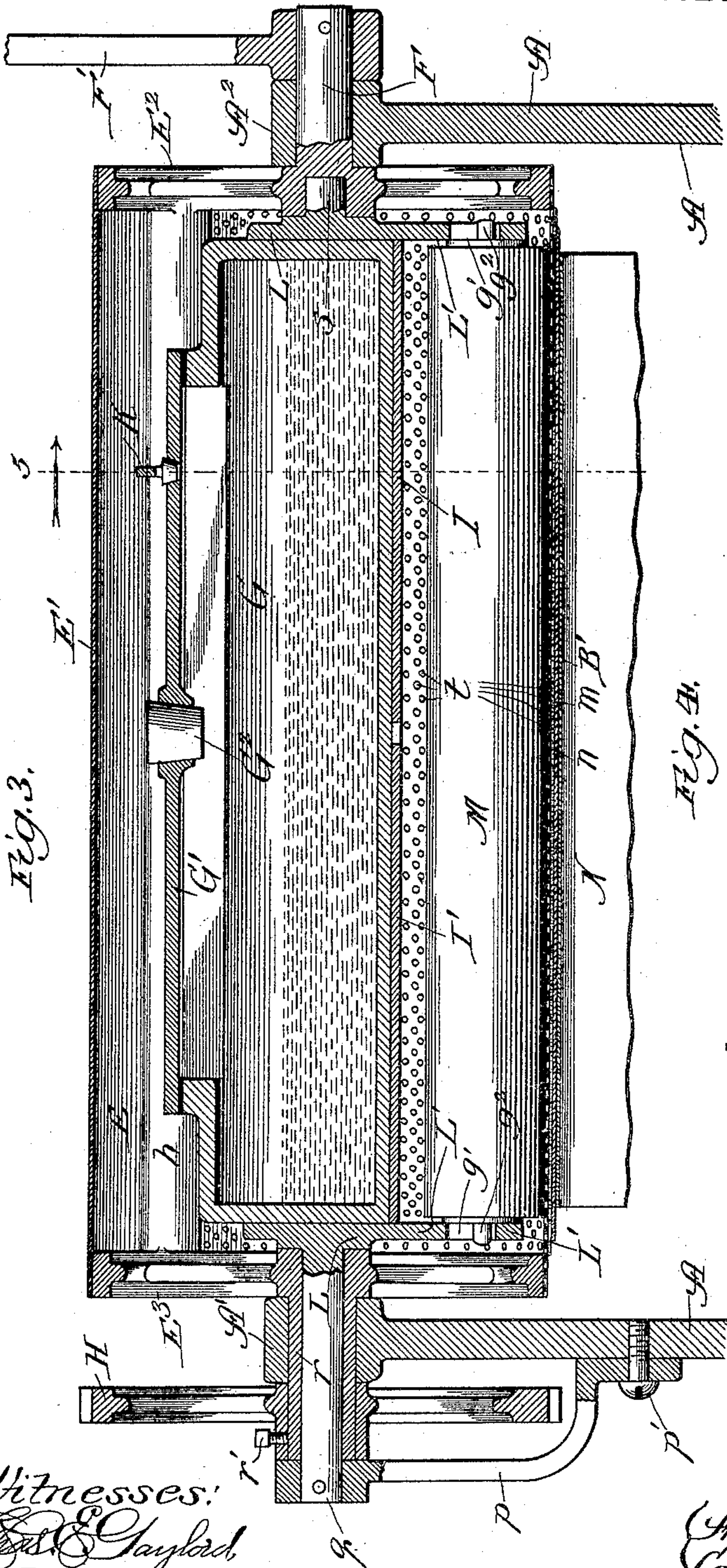
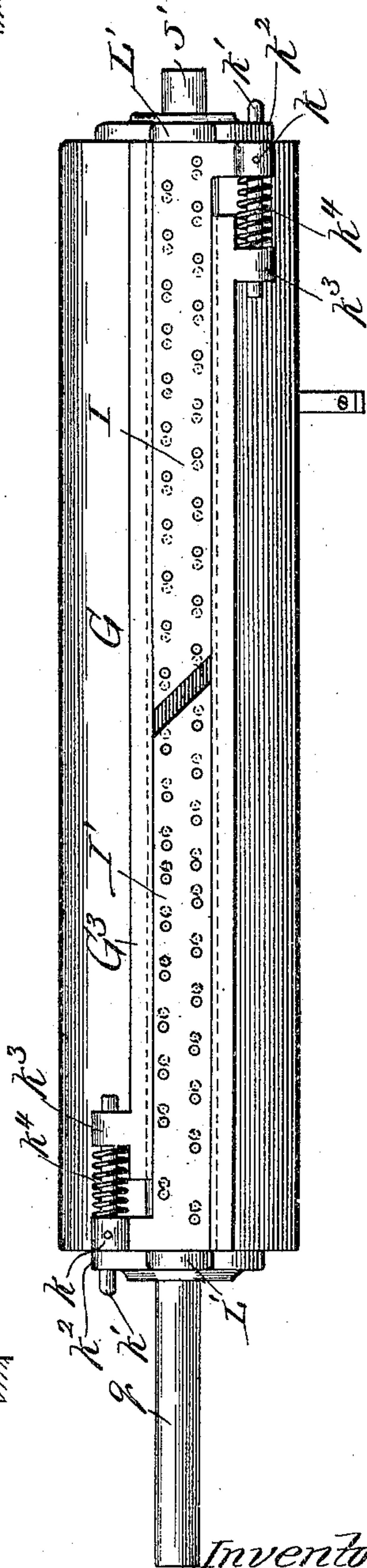


Fig. 3.

Fig. 4.



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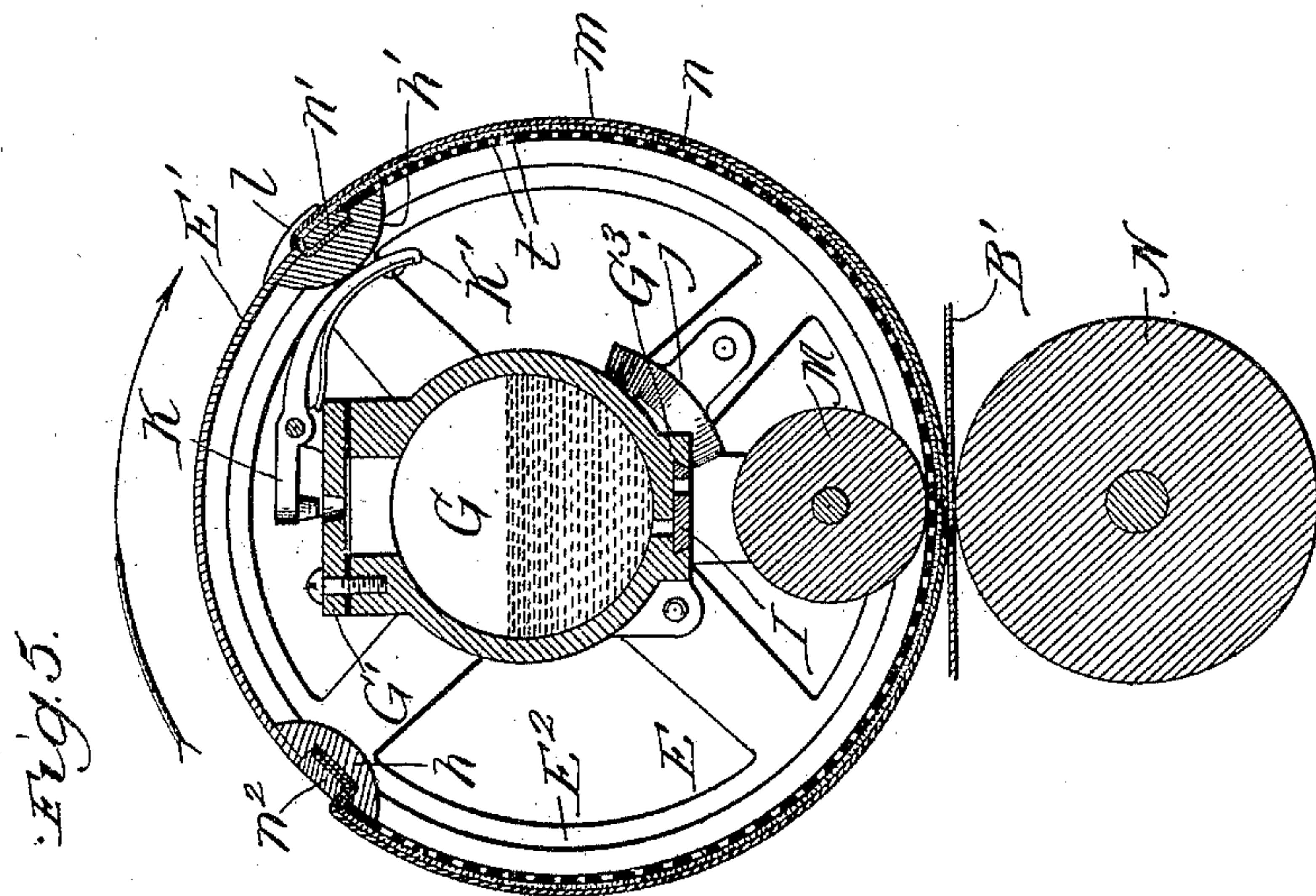
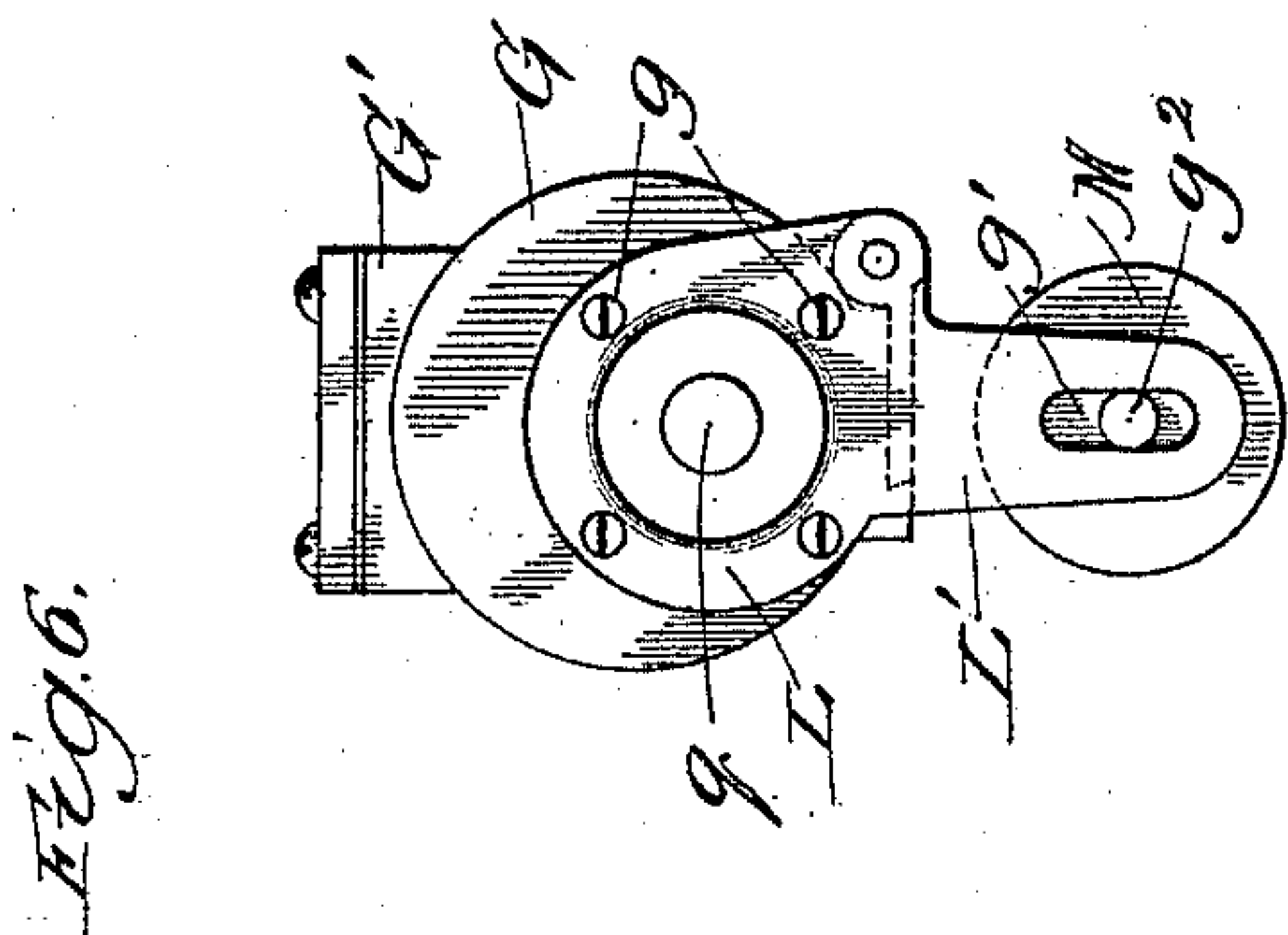
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A. C. THOMAS & C. M. HAMILTON.
ROTARY STENCILING MACHINE.

No. 604,506.

Patented May 24, 1898.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADDISON C. THOMAS AND CASSIUS M. HAMILTON, OF CHICAGO, ILLINOIS,
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ROTARY STENCILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 604,506, dated May 24, 1898.

Application filed August 14, 1897. Serial No. 648,200. (No model.)

To all whom it may concern:

Be it known that we, ADDISON C. THOMAS and CASSIUS M. HAMILTON, citizens of the United States, residing at Chicago, in the
5 county of Cook and State of Illinois, have invented a new and useful Improvement in Rotary Stenciling-Machines, of which the following is a specification.

Our invention relates to an improvement in
10 stenciling-machines, and involves the application of a stencil to a perforated cylinder supplied interiorly with an inking device, whereby the stencil through the medium of the cylinder may be given a continuous rotary
15 motion, after the manner of a rotary printing-press, and thus caused to print upon paper passing through the machine and supplied from a convenient roll. The stencil used may be of any suitably-prepared paper or
20 waxen sheet and the characters therein may be written, as with a stylus, or printed, as with a type-writer.

The more immediate object of our invention is to facilitate the production of a large
25 number of copies of a given manuscript or article, so that the same may be furnished in the least possible time and at small expense.

Our improved machine finds a most useful application to the needs of press associations
30 and the like, where it is desirable to furnish to a large number of patrons, as to a large number of newspapers, say, in a very short space of time items of news or other matter of general interest. It will be understood,
35 however, that the invention is not to be limited in its application to this particular purpose, as it may be used to advantage generally in the reproduction of multiple copies of manuscript or the like.

The accompanying drawings illustrate our
40 improved stenciling-machine, the most important elements of which are the perforated stencil-cylinder, the stencil wrapped upon and secured thereto, an ink-chamber within
45 though not necessarily a part of or connected with the cylinder, valve-controlled outlets in said chamber, an inking-roller contacting with the inner surface of said perforated cylinder, and means for passing the paper
50 through the machine and severing or separating the copies.

We do not, however, wish to be understood as meaning to imply that all these enumerated elements form indispensable parts of the machine.

In the drawings, Figure 1 is a view in side
55 elevation of our novel rotary stenciling-machine supplied with a roll of paper and in operative condition; Fig. 2, a vertical longitudinal section, the sectional plane being moved inward to cut the two feed-rolls which draw
60 upon and sever the paper at the rear or discharge end of the machine; Fig. 3, a broken vertical transverse section taken on line 3 of Fig. 1; Fig. 4, a bottom view of the ink-chamber, showing the slide-valves guarding its discharge-openings; Fig. 5, a section on line 5 of
65 Fig. 3, and Fig. 6 a detached view of the ink-chamber and the inking-roller beneath the same.

A is a frame of any suitable design, upon
70 which are mounted the operative parts. At the front end of the frame is journaled a paper-drum B, upon which is coiled a roll of paper B'. At the opposite end of the frame are journaled feed rolls or drums C and D,
75 which serve the purpose of feeding or drawing the paper through the machine and of severing the printed sheets.

In the upper central part of the frame is
80 journaled a cylinder E, preferably of metal, supplied throughout a portion or the whole of its surface with small perforations *t*, and provided, preferably, though not necessarily, with a removable section E'. The manner of mounting this cylinder and its attendant
85 parts is shown in Fig. 3. The frame A is provided with journal-boxes A' and A². The cylinder E is supported at its ends upon spiders E² and E³. The spider E² is provided on the outer side of its hub portion with a
90 shaft F, journaled in the box A² and connected on the outer side of said box with an operating-handle F'. On the inner side of its hub the spider E² is provided with a socket to receive the projecting shaft *s* of an ink-chamber
95 G. The particular form of this ink-chamber and the particular manner of operating its valves are not of great importance. It is important, however, that ink shall be supplied to the inside of the cylinder E, and it is
100

quite important, though not indispensable, that automatic means be provided for admitting the ink from the ink-chamber to the interior surface of the perforated cylinder.

5 The spider E^3 is provided at its hub portion with an outwardly-extending sleeve r , journaled in the box A' , on the outer side of which it is provided with a gear-wheel H , secured to the sleeve, as by a set-screw r' . Through
10 the sleeve r extends a shaft q , which supports the adjacent end of the ink-chamber E and to the outer end of which is rigidly attached an arm p , secured to the frame A by means of a screw p' . It thus appears that
15 the cylinder E is free to revolve, while the ink-chamber G is held stationary. The cylinder E is provided on its perforated portion with a sheet of cloth or other absorbent material n to form a pad secured to the cylinder
20 in any suitable manner as by strips $n' n^2$. Upon this pad is placed the stencil m , which is secured in place by having its ends caught beneath the edges of the removable section E' . The removable section is itself secured
25 in place by screws (not shown) passing through the flange l and by the metal strip n^2 , which is provided with downturned ends perforated to receive pins n^3 . (Shown in Fig. 2.)

30 The top portion G' of the ink-chamber G is provided with a stopper G^2 , which may be removed to fill the chamber. The ink-chamber here shown is provided at the bottom with two automatically-operated valves $I I'$, guarding the discharge-openings, and at the top
35 with an air-valve K , also automatically operated to admit air at those periods when the discharge-valves are open. The chamber G is provided at its bottom with a rectangular
40 portion G^3 , (see Figs. 4 and 5,) having a dovetail groove, which receives the two slide-valves I and I' . The valves $I I'$ and the ink-chamber are provided with two rows of non-registering openings. Each of the slide-
45 valves is provided with a laterally-projecting lug k , carrying a pin k' , moving in guides k^3 and k^2 , respectively, upon the ink-chamber and collars L , secured to the ends thereof. The valves are held normally in their non-
50 registering position by springs k^4 . The valves are operated by cams j , (see Figs. 2 and 5,) located upon the inner sides of the spiders A^2 and A^3 . The air-valve K is spring-held and pivoted, as shown, and provided with a
55 curved lever-arm K' , shown in Fig. 5 as engaged by a cam h' upon the interior surface of the cylinder E . The cam h' engages the lever-arm K' at the same time that the slide I' is operated by the cam upon the spider E^3 .
60 Similarly the air-valve is operated by a second cam h at the same time the slide I is operated by its cam on the spider E^2 . Thus air is admitted to take the place of the outflowing ink.

65 The collars L are secured to the chamber by screws g and have downwardly-depending lugs L' , provided with slots g' , within which

are journaled the ends of the shaft g^2 of an inking-roller M . The roller M is of any suitable material and rests at the bottom of the
70 cylinder E upon its interior surface, by which it is given a rotary motion. Beneath the cylinder E is an impression-cylinder N , preferably of rubber, journaled in upwardly-extending arms P , carried by a shaft P' , jour-
75 naled in spring-held slides P^2 , moving in guides attached to the main frame. At one end (see Fig. 1) the shaft P' is provided with an operating-handle Q , by means of which the impression-cylinder may be rocked away
80 from the stencil-cylinder to permit insertion of the paper. When the impression-cylinder is rocked away from contact with the stencil-cylinder E , the handle Q rests upon a support Q' . The tension of the springs control-
85 ling the slides P' is adjusted by set-screws f , the distance between the top of the roller N and the bottom of the slides being great enough to cause the latter to move downward
90 a short distance from the tops of their guides against their springs when the impression-cylinder is thrown up against the stencil-cylinder E , as shown in Fig. 1. The impression-cylinder is held against moving beyond a ver-
95 tical when thrown in contact with the stencil-cylinder by a lug f' upon the frame A .

The gear-wheel H meshes with an idler e , journaled in the frame. The idler meshes with a gear-wheel R , connected with the roll
100 D , which in turn meshes with a gear-wheel R' , connected with the roll C . Extending longitudinally of the roll C is a knife d , having a serrated edge which projects slightly beyond the surface of the roll and is pro-
105 vided with spring-held rubber sheathing-strips d' , as shown. The roll D is provided with a female die c , which coacts with the knife to sever the sheets of paper. As the upper surface of the paper contains printed
110 matter before it reaches the roll D and since the latter presses tightly upon the roll C to help in the action of feeding the paper through the machine, it is desirable to have these rolls contact only at their ends, as
115 shown in Fig. 2. Throughout the greater portion of its length, however, the roll D should have its surface slightly depressed (though this is not shown) to prevent blurring of the printed page. The paper-drum
120 B should move with sufficient friction to insure the requisite tension of the paper in passing through the machine. If desired, any supplementary tensioning device for insuring the correct passage of the paper may be employed. In practice we have used a
125 supplementary roller for guiding the paper in a somewhat more sinuous path, thus accomplishing this purpose; but the machine here described works satisfactorily, and it has been thought well to omit this feature
130 from the drawings for the sake of greater perspicuity.

The operation is as follows: Assuming the ink-chamber to have been supplied with ink,

the stencil-chamber E to have been supplied with the sheet of absorbent material, the stencil placed thereon with the top or smooth side toward the cylinder, and the removable section E' to have been secured in place, there remains only to pass the paper from the roll B' and adjust it between the stencil-cylinder and impression-cylinder and thence between the rolls D and C, when the machine is ready for printing. By means of the handle F' or any suitable power connection, if the machine be large enough to make it desirable, motion in the direction indicated is communicated to the stencil-cylinder and thence by the train of gearing described to the rolls D and C. As the stencil-cylinder rotates the slide-valves I and I' are alternately operated, and simultaneously therewith the air-valve is opened to admit air to replace the outflowing ink. Ink drops down upon the frictionally-operated inking-roller M and is thereby spread over the inner surface of the stencil-cylinder, from which it exudes or is expressed through the minute openings *t*. On the outer surface it is taken up by the absorbent pad and caused to spread to all parts thereof by capillary attraction. From the absorbent pad the ink is pressed out through the character-perforations of the stencil as the latter is passed in close contact with the paper between the stencil-cylinder and the impression-cylinder. There the printing operation is effected, and from thence the paper passes through the rolls C D, where the printed sheets are sev-

ered or perforated, as desired, by the knife above described.

It is obvious that the broad idea of our invention is that of supporting the stencil upon a cylinder and in any appropriate manner supplying ink to the inner side of said stencil in a practically continuous manner through the medium of the cylinder, thereby enabling the process of stenciling or mimeographing to be accomplished in a rotary press having a continuous movement in one direction. It is equally obvious that various changes in details of construction may be made without departing from the spirit of our invention. Hence we wish to be understood as intending no limitation to the specific construction herein shown, by the particular description thereof, except as shall appear from the appended claim.

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

In a rotary stenciling-machine, the combination with the frame, of a stencil-cylinder journaled therein, means for supplying ink to the inner side of said stencil while on the cylinder, a paper-drum, and feed and severing rolls journaled in the frame, substantially as and for the purpose set forth.

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CASSIUS M. HAMILTON.

In presence of—

J. H. LEE,
M. S. MACKENZIE.