No. 798,274. PATENTED AUG. 29, 1905.

L. P. EISENBEIS.

PRINTING DEVICE FOR PAPER BAG MACHINES.

APPLICATION FILED OCT. 18, 1902.

2 SHEETS—SHEET 1.

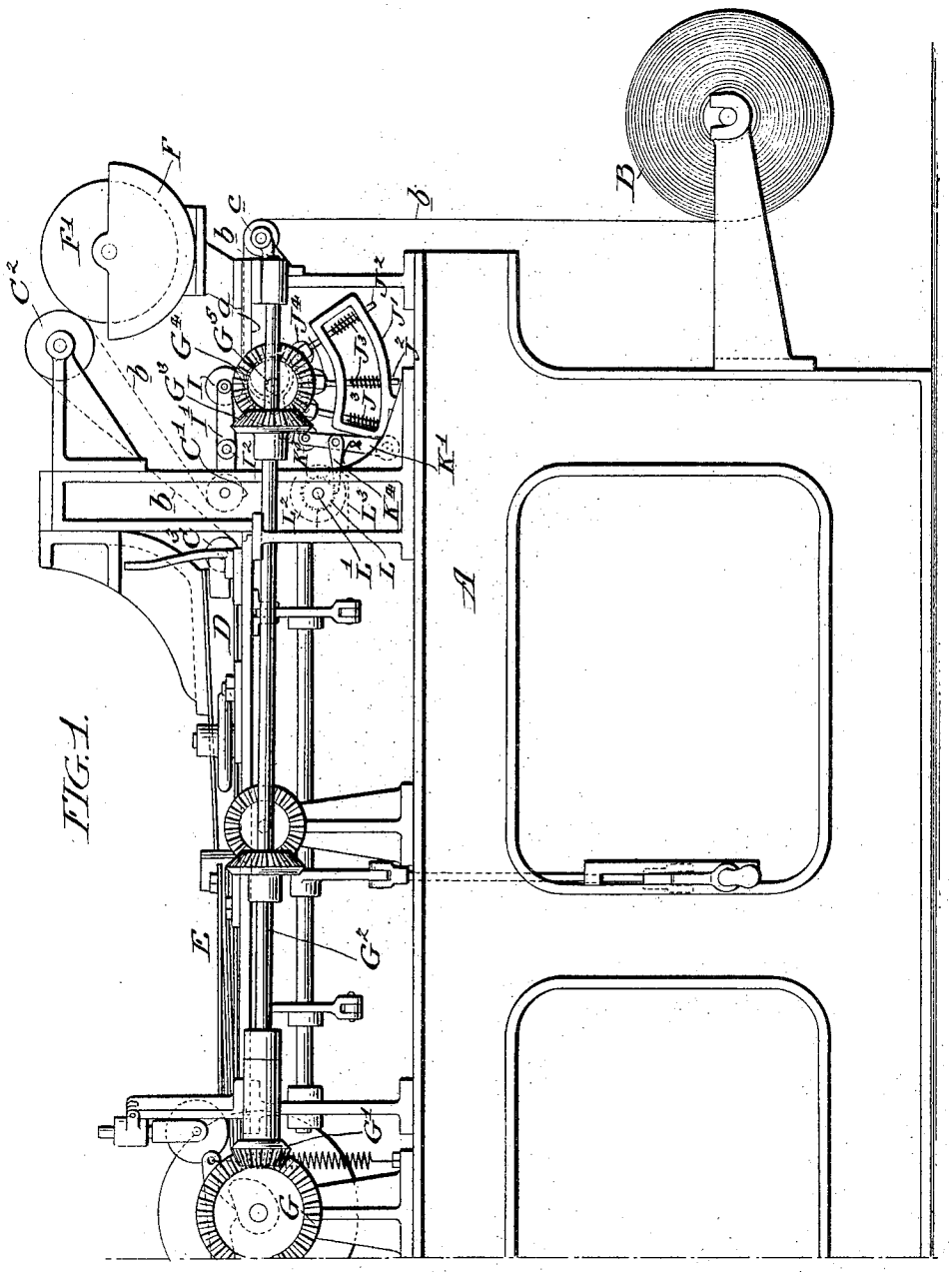


FIG. 1.

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2 SHEETS—SHEET 2.

FIG. 2.

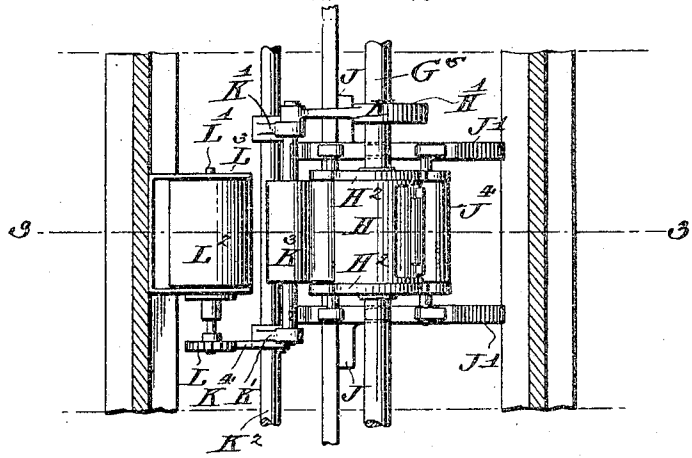


FIG. 3.

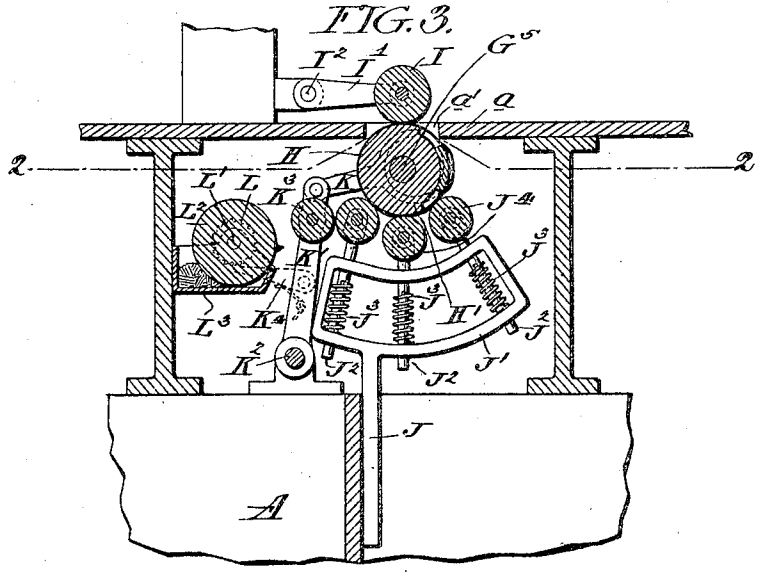
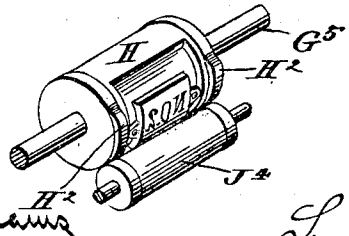


FIG. 4.



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UNITED STATES PATENT OFFICE.

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PRINTING DEVICE FOR PAPER-BAG MACHINES.

No. 798,274. Specification of Letters Patent. Patented Aug. 29, 1905.

Application filed October 18, 1902. Serial No. 127,783.

To all whom it may concern:

Be it known that I, LOUIS P. EISENBEIS, a citizen of the United States of America, residing in Ottumwa, in the county of Wapello, in the State of Iowa, have invented a certain new and useful Improvement in Printing Devices for Paper-Bag Machines, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to paper-bag machines such as incorporate mechanism for forming a web of paper into a tube from which the paper bags are subsequently made, and has for its object to provide simple and efficient mechanism by which the web of paper is printed with the marks desired to appear upon the bags prior to its formation into a tube.

The nature of my improvements will be best understood as described in connection with the drawings, in which they are illustrated, and in which—

Figure 1 is a side elevation of a portion of the paper-bag machine, comprising the tube-forming mechanism and the mechanism for printing upon the paper web before it is formed into a tube. Fig. 2 is a plan view of the printing mechanism, shown as taken on the section-line 2 2 of Fig. 3. Fig. 3 is a vertical section through the printing mechanism, taken on the section-line 3 3 of Fig. 2; and Fig. 4 is a perspective view showing the type-cylinder and one of the ink-applying rolls used in connection therewith.

A indicates the frame of the paper-bag machine, B the roll of paper from which the web (indicated at *b*) is led over the guide-rolls C, C′, C^2, and C^3 to the former (indicated at D) and about which the web of paper is folded into a tube. I have indicated generally at E the mechanism coacting with the former B to form the web of paper into a tube, but have not shown this in detail because it forms no part of my present invention and might be varied indefinitely. The particular devices shown are those described in my former application for Letters Patent, filed February 14, 1901, Serial No. 47,306.

F indicates the paste-trough, in which lies the paste-roll (indicated at F′) which applies a line of paste to the web of paper passing over the guide-roll C^2.

G indicates a positively-moving bevel-gear, which through an engaged bevel-gear G′ communicates motion to a shaft G^2, which in turn through a bevel-gear G^3 engaged with a bevel-gear G^4, which communicates motion to the shaft G^5, upon which is secured the type-cylinder H of the printing mechanism.

H′ is an eccentric also secured to the shaft G^5.

H^2 H^2 (shown in Figs. 2 and 4) are cams secured at the end of the cylinder H and against which rest the ends of the ink-applying rolls J^4.

I indicates the impression-cylinder, coacting with the type-cylinder, said impression-cylinder being journaled on the ends of arms I′, pivoted to the frame of the machine at I^2. As shown, the type-cylinder is situated immediately below and the impression-cylinder immediately above the plane in which the web *b* of paper passes between the guide-rolls C and C′, and by preference I provide between these guide-rolls a table (indicated at *a*) which guides, alines, and supports the web of paper between the guide-rolls and while it is being acted on by the printing-couple, said table *a* having an opening *a′* formed in it to give clearance to the type-cylinder, as shown in Fig. 3.

J J are supports, to the upper ends of which are secured the frames J′, extending below and to each side of the type-cylinder, as shown, and serving to support and aline the rods J^2 J^2, &c., which support at their upper ends the ink-applying rolls J^4, &c., and are in turn supported by the springs J^3 J^3, &c., which act to press the ink-applying rolls against the type-cylinder, or rather against the cams H^2 H^2 of said cylinder which regulate the degree of pressure with which the ink-applying surface of the rolls is permitted to come in contact with the type on the cylinder.

K is a connecting-rod connected by an eccentric-strap with the eccentric H′ and pivotally connected with the upper end of the lever K′, the lower end of which is pivoted at K^2 and which supports an ink-conveying roll K^3 and also a spring-supported pawl, (indicated at K^4,) said pawl being in operative contact with a ratchet-wheel L, secured on a shaft L′, to which is also secured an ink-roller L^2, situated in an ink-trough, (indicated at L^3.)

It will be seen that the impression-cylinder I rests upon the paper and through it upon the type-cylinder by gravity the web of pa-

per is drawn through the machine and to and over the former by any ordinary mechanism for this purpose, such feed mechanism being in fixed operative relationship with the gear G, which through the connections described communicates motion to the shaft G^5, upon which is mounted the type-cylinder and which shaft also communicates motion through the eccentric H′ to the oscillating lever K′, causing the roll K^3 to move alternately into contact with the ink-rolls L^2 and the adjacent ink-applying roll J^4, the ink-roll L^2 being kept in intermittent motion by the action of the pawl K^4 and ratchet L.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a paper-bag machine, the combination with web-guiding rolls over which the web is guided on its way to the tube-forming mechanism, a table situated between two of such guiding-rolls and serving to support and guide the web passing over it, said table having an opening formed through it, a type-cylinder and an impression-cylinder situated on opposite sides of the table and coacting on the web through the opening in said table, an inking-roll coöperating with the type-cylinder, an ink-trough having a roller therein, an ink-conveying roll alternately engaging the trough-roller and the inking-roll, means for driving the type-cylinder and mechanism connected therewith for oscillating the ink-conveying roll.

2. In a paper-bag machine, the combination with web-guiding rolls over which the web is guided on its way to the tube-forming mechanism, a table situated between two of such guiding-rolls and serving to support and guide the web passing over it, said table having an opening formed through it, a type-cylinder and an impression-cylinder situated on opposite sides of the table and coacting on the web through the opening in said table, an ink-trough having a roller therein, a series of spring-supported inking-rolls arranged to apply and distribute the ink to the type-cylinder, an intermittently-acting ink-conveying device alternately engaging the trough-roller and one of said series of ink-applying rolls and means for actuating the type-cylinder and for oscillating the ink-conveying device.

3. In a paper-bag machine, the combination with mechanism for guiding a web of paper to the tube-forming mechanism, of a type and impression cylinder coacting to print on the unfolded web, a series of spring-supported inking-rolls J^4, an ink-trough L^3 having a roller L^2, a ratchet-wheel L connected to said ink-roller, an oscillating lever K′ having an ink-conveying roll K^3 secured thereto, a pawl K^4 secured to the lever K′ and arranged to actuate the ratchet L and through it the ink-roller and means for actuating the ink-roller and the lever K′.

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