(No Model.) 7 Sheets—Sheet 1.

Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

No. 391,607. Patented Oct. 23, 1888.

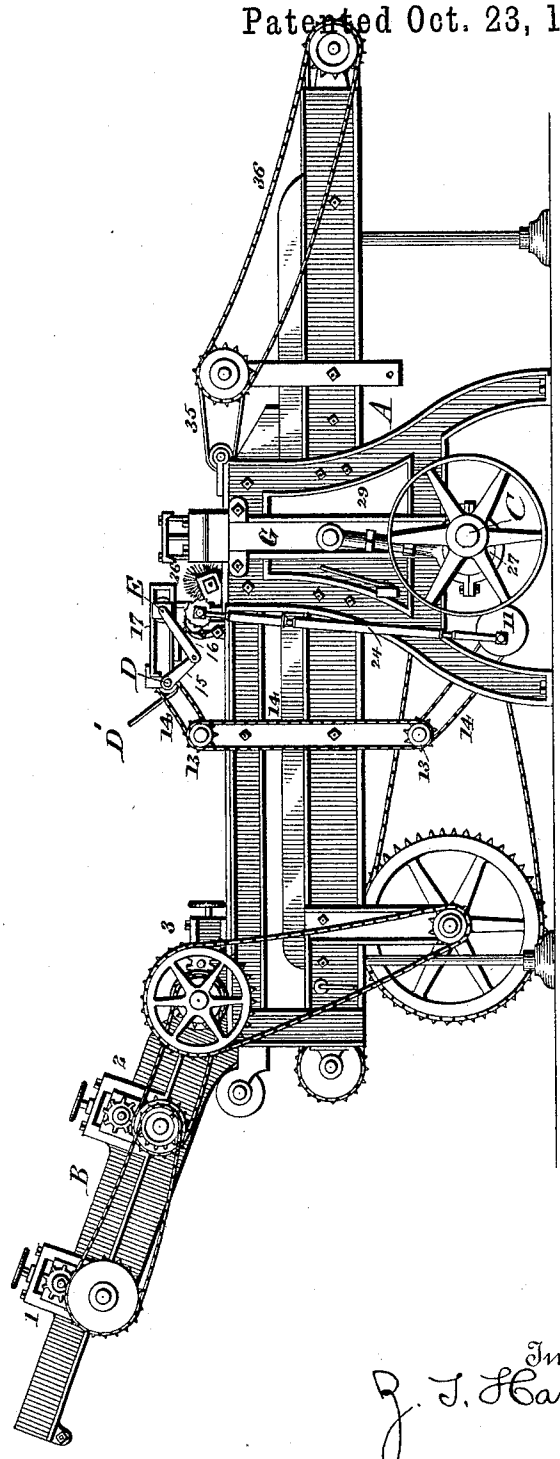


Fig. 1.

Witnesses.
P. F. Eagles.
L. Douville.

Inventor.
Z. T. Hartman.
By His Attorneys.
Wiederhein & Kuhner

N. PETERS. Photo-Lithographer, Washington, D. C.

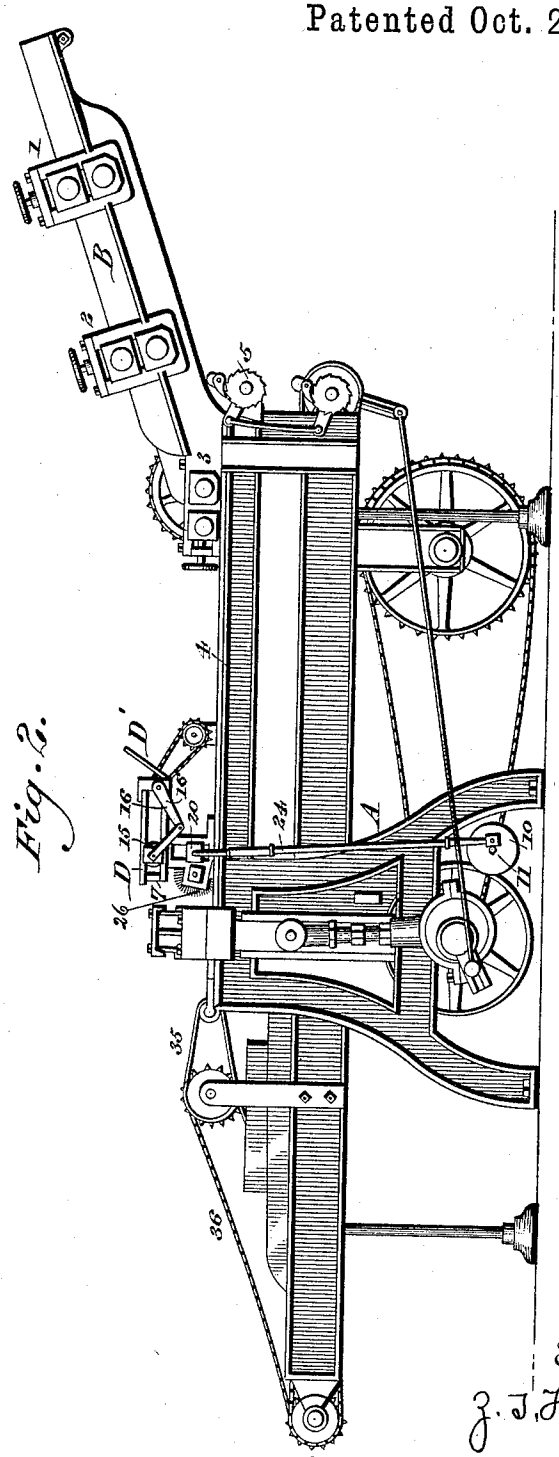
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Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

No. 391,607. Patented Oct. 23, 1888.

Fig. 2.



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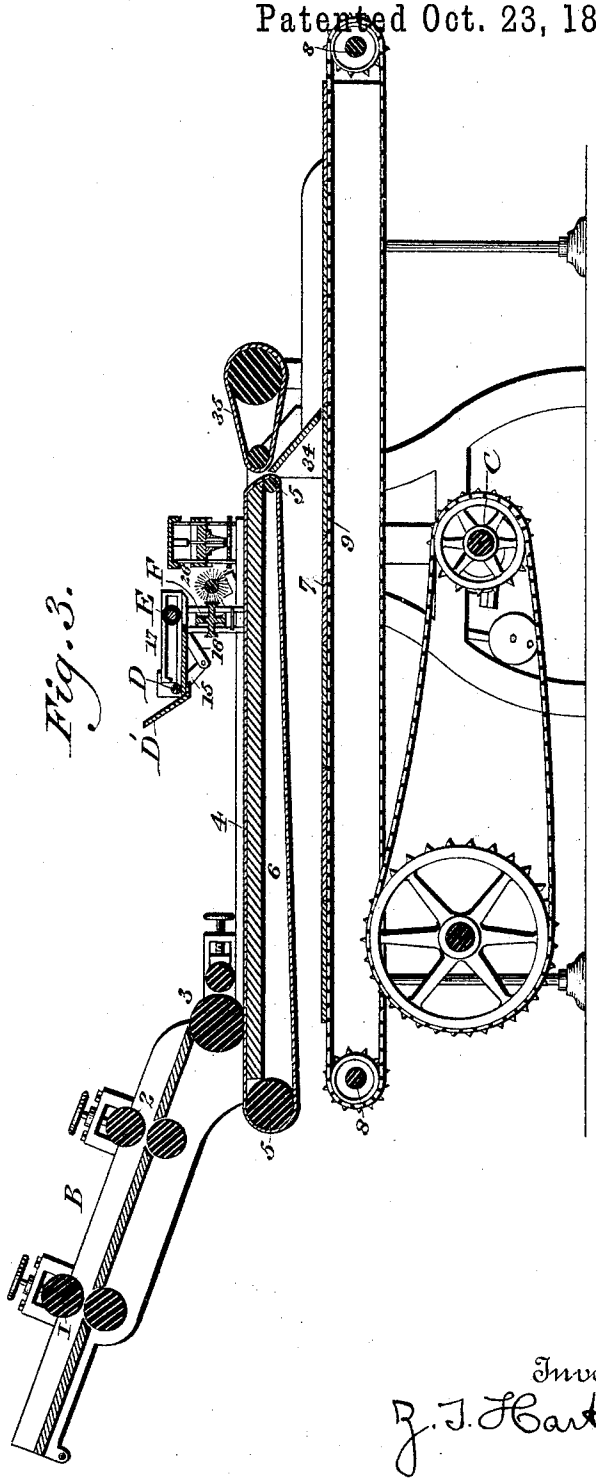
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Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

No. 391,607. Patented Oct. 23, 1888.

Fig. 3.



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Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

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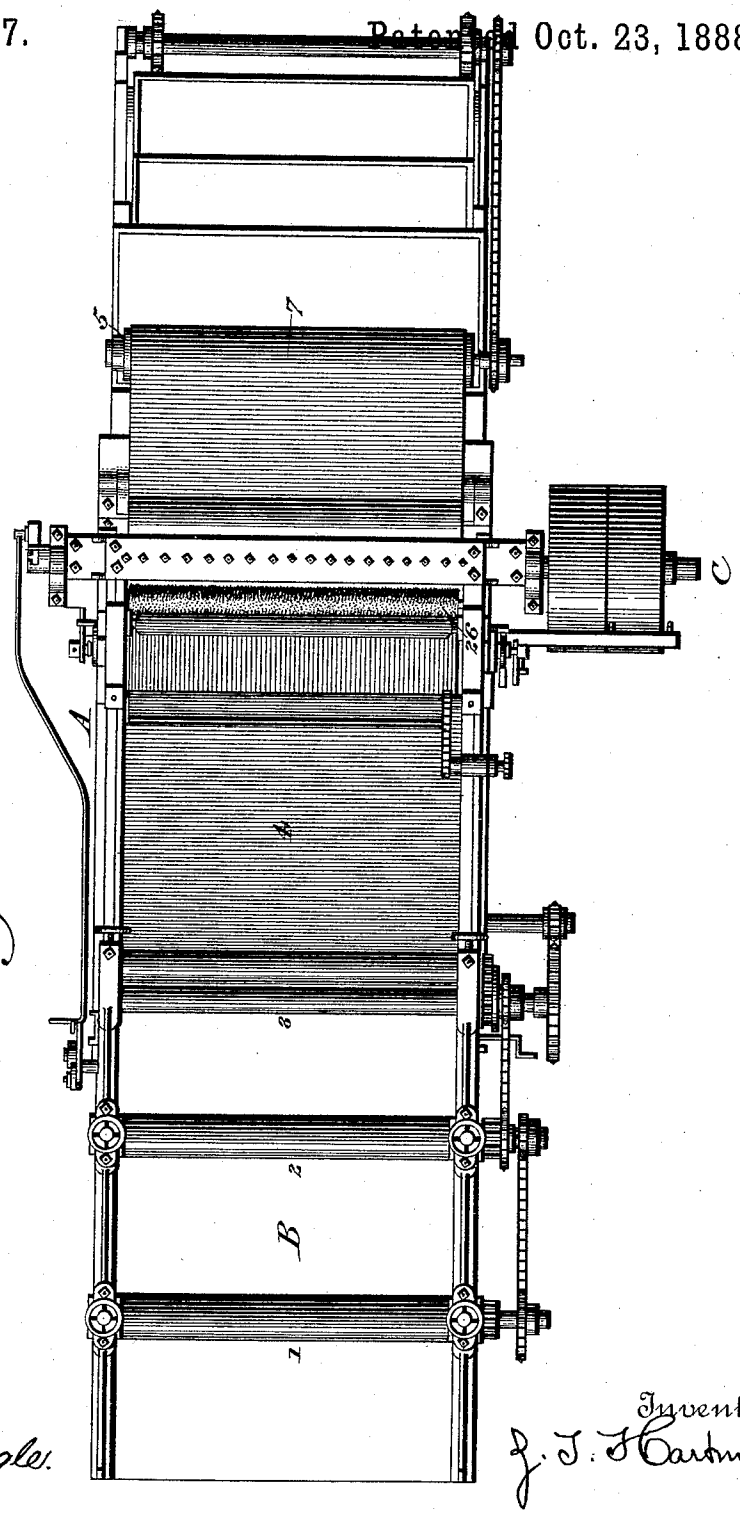


Fig. 4.

Witnesses,
P. F. Eagle.
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N. PETERS, Photo-Lithographer, Washington, D. C.

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Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

No. 391,607. Patented Oct. 23, 1888.

Fig. 6.

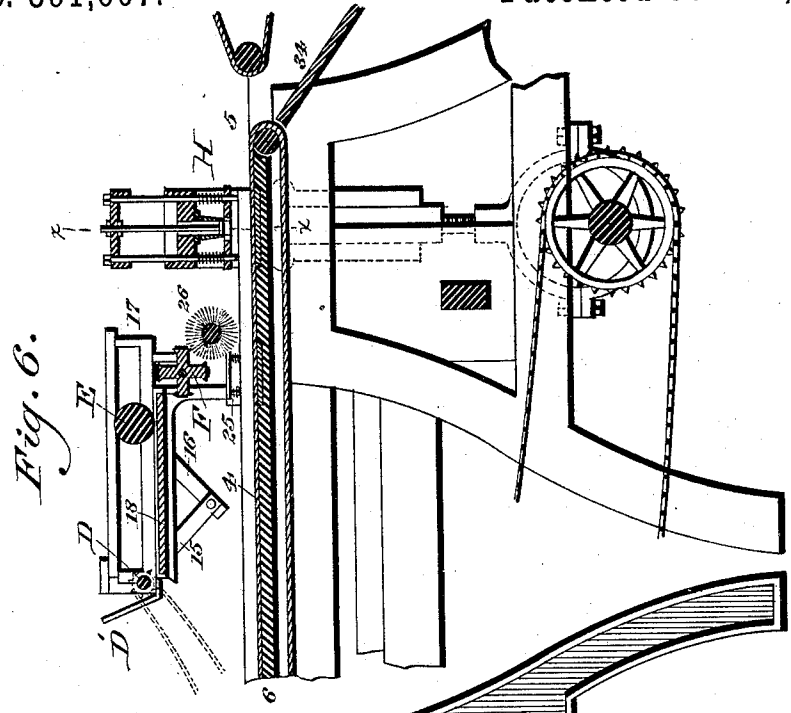
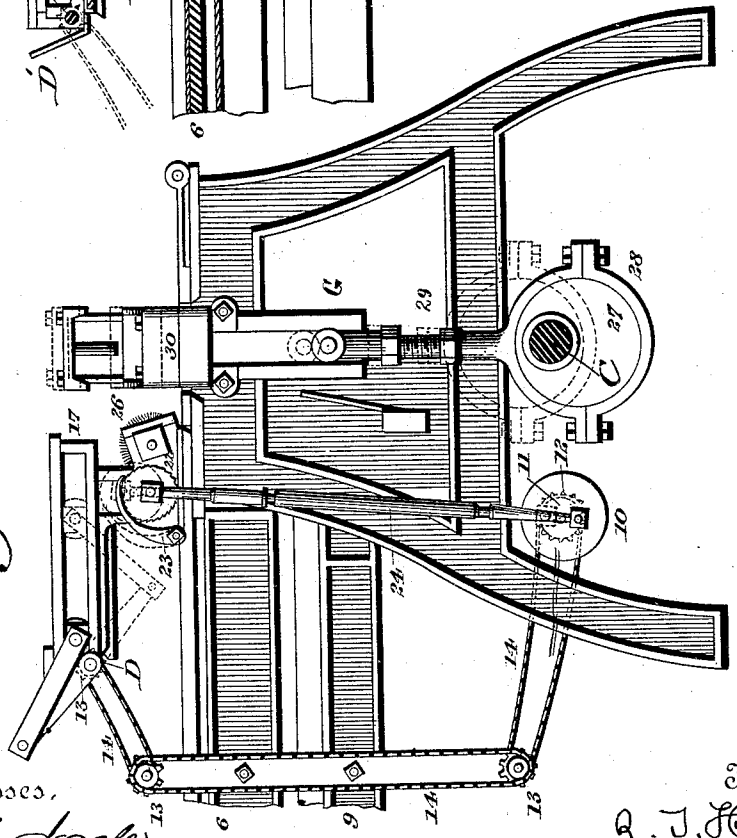


Fig. 5.



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(No Model.) 7 Sheets—Sheet 6.

Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

No. 391,607. Patented Oct. 23, 1888.

Fig. 8.

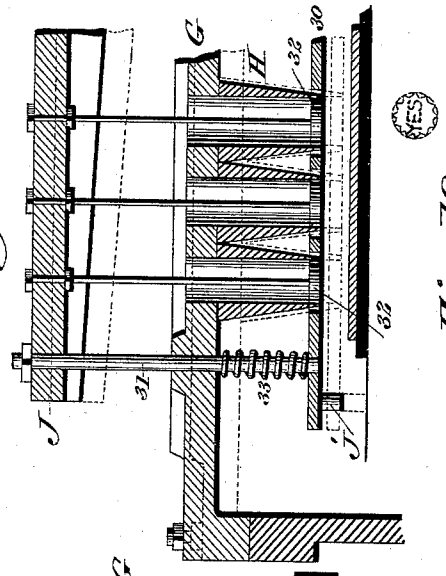


Fig. 10.

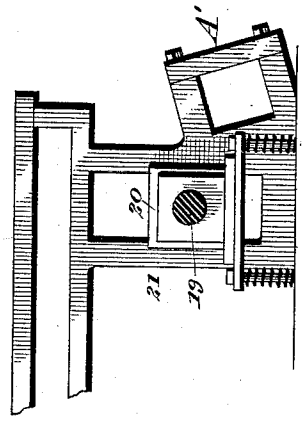


Fig. 7.

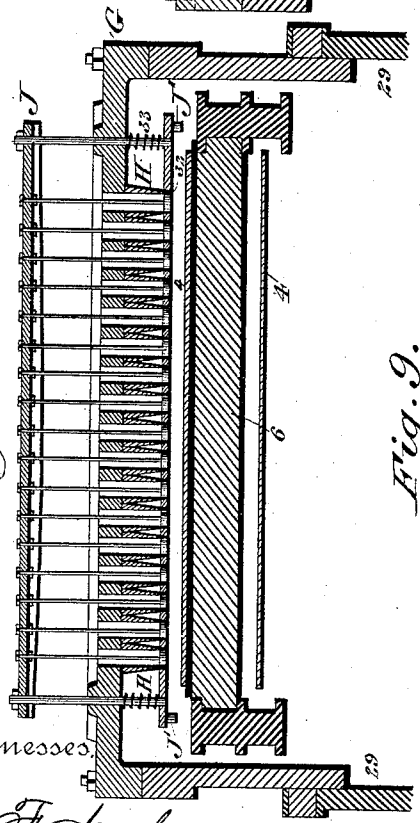
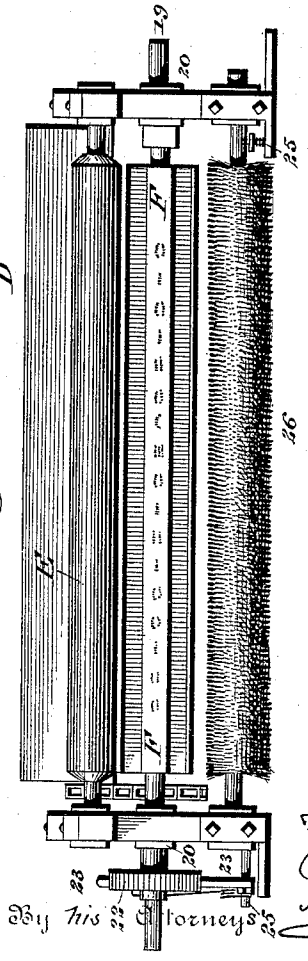


Fig. 9.



Witnesses,
P. F. Dagle.
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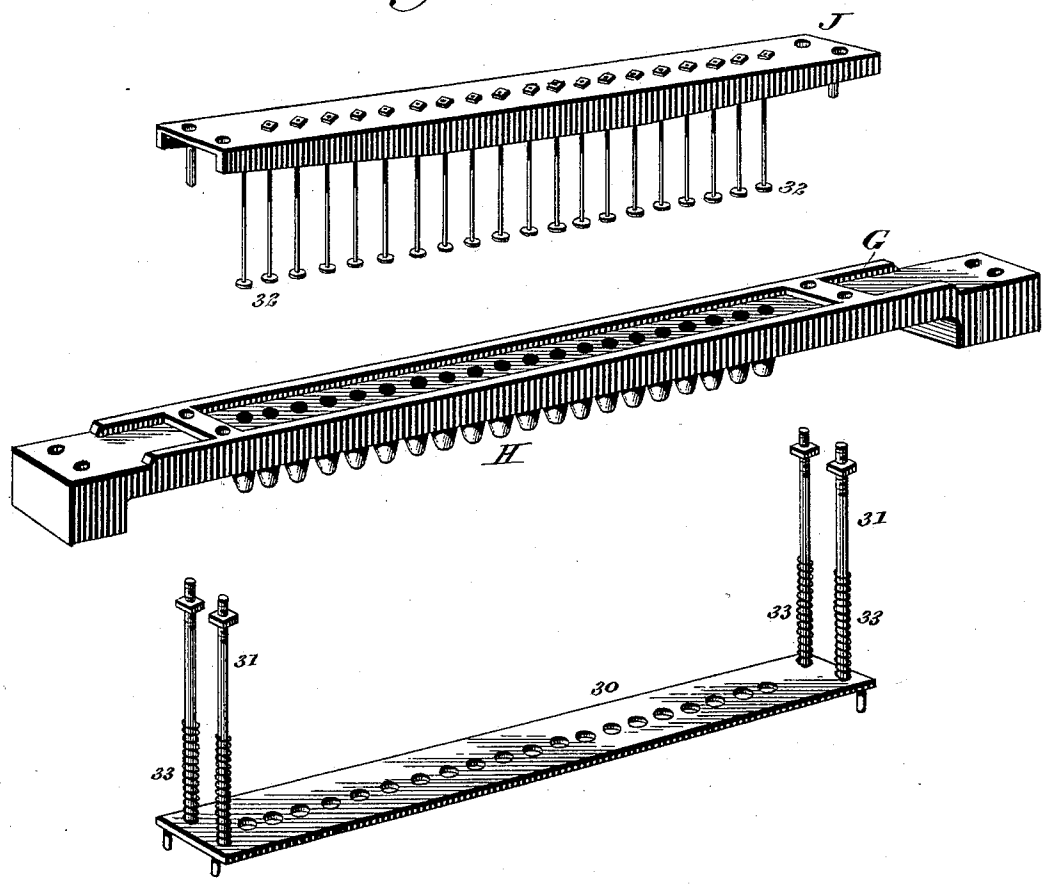
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Z. T. HARTMAN.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

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Fig. 11.



Witnesses.
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UNITED STATES PATENT OFFICE.

ZACHARY TAYLOR HARTMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO PHILIP WUNDERLE, OF SAME PLACE.

MACHINE FOR MANUFACTURING AND PRINTING ARTICLES OF CONFECTIONERY.

SPECIFICATION forming part of Letters Patent No. 391,607, dated October 23, 1888.

Application filed November 30, 1887. Serial No. 256,495. (No model.)

To all whom it may concern:

Be it known that I, ZACHARY TAYLOR HARTMAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Machines for Manufacturing and Printing Articles of Confectionery, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in machines for manufacturing and printing confectionery; and it consists in the combination of parts as herein set forth and claimed.

Figures 1 and 2 represent elevations of opposite sides of a confectionery-machine embodying my invention. Fig. 3 represents a vertical section thereof. Fig. 4 represents a top or plan view thereof. Fig. 5 represents a side elevation of a portion thereof on an enlarged scale. Fig. 6 represents a vertical section of the parts shown in Fig. 5. Fig. 7 represents a vertical section on line *x x*, Fig. 6. Fig. 8 represents a view of a portion of Fig. 7 on an enlarged scale. Fig. 9 represents a top view of a detached portion on an enlarged scale. Fig. 10 represents a vertical section of a detached portion on an enlarged scale. Fig. 11 represents detail views on an enlarged scale of the separate parts shown in Fig. 7.

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

Referring to the drawings, A represents the frame of the machine, having at one end the feed-table B, on which are mounted the feed-rollers 1 2, to which motion is imparted from suitable gearing of the machine. At the inner end of the table B are guide-rollers 3, which are located above the endless apron 4, which passes around rollers 5 at the ends of the table 6 at the top of the frame A. Below the apron 4 is an endless apron, 7, which passes around rollers 8 at the end of the table 9, which is located beneath the table 6. The rollers 5 and 8 receive motion from suitable gearing of the machine, so as to impart intermittent motion to the aprons 4 and 7.

C represents the driving-shaft, which is connected with other parts of the machine by suitable belts or bands for operating the same.

Crank-wheels 10 are connected with the shaft 11, mounted on the lower portion of the frame A, said shaft carrying a sprocket-wheel, 12, which imparts motion to a shaft, D, at the top of the machine by means of sprocket-wheels 13 and belts, bands, or endless chains 14.

A crank, 15, is connected with the shaft D, and an arm, 16, pivoted to said crank, said arm carrying an inking-roller, E, whose boxes or bearings are fitted to a horizontally-arranged guide, 17, above the apron 4, said roller moving for a portion of its travel on an inking-pad, 18, which is secured to the bottom of said guide.

F represents a many sided or faced type wheel or head whose shaft 19 is rotatably mounted in boxes 20, which are fitted in guides 21, rising from the table 6. One end of said shaft 19 has secured to it a ratchet, 22, with which engages a pawl, 23, hinged to the table 6. The boxes 20 are raised and lowered by means of the wheels 10 and rods 24, which are connected with said wheels and boxes, it being noticed that as the boxes rise the hinged pawl 23, engaging with the teeth of the ratchet 22, causes the rotation of the type-head, so as to present a fresh side or face toward the apron 4 for making an impression on the material on said apron, the upper side or face of said head being placed in the path of motion of the roller E, so as to be inked or colored by the same. As the type-head descends, the boxes of its shaft 19 come in contact with buffers 25, which are secured to the table 6, thus avoiding abruptness in said descent and injury to the parts in question. Adjacent to the type-head is a brush, 26, for cleaning the faces of said head and removing all surplus material therefrom.

Connected with the shaft C are eccentrics 27. The yokes 28 have connected with them rods 29, which are pivotally connected with a rising and falling frame, G, from which descend cutters H, which, as will be seen, are hollow and of conical form, with cutting-edges at bottom.

Surrounding the cutters H are the walls of openings of a stripper, 30, which is connected by rods 31 with a cross-head, J, the latter being located above the frame G and carrying embossing-plungers 32, which centrally enter the cutters H and have their normal positions at the bottom of the latter. (See Figs. 7 and 8.) On the under side of the stripper are depending pins J', which, when the stripper is lowered, are adapted to come in contact with

the frame on the sides of the table 6, so as to prevent pressure of the material by the stripper. The rods 31 pass freely through the top piece of the frame G and are encircled by springs 33, which are interposed between said top piece and the stripper 30.

An inclined chute, 34, is interposed between the aprons 4 and 7, and an additional apron, 35, is provided at the discharge end of the apron 4, one of the rollers of said apron being connected with one of the rollers 8 of the apron 7 by means of a belt, band, or endless chain, 36.

The operation is as follows: The machine is set in motion and the mass or material from which the confectionery is to be made placed on the table B and formed into a sheet of required thickness by its passage through the rollers 1 2 3, the sheet then reaching the apron 4, by which it is carried intermittently under the type-head. The latter then descends and prints or impresses the sheet or material and afterward rises, the imprinted or impressed material then advancing and being conveyed under the cutters, the latter being in elevated position. The face of the type-head comes in contact with the brush 26 as said head rises and falls, thus cleansing said head, as has been stated. The frame G now descends and lowers the stripper, cutters, and plungers. The strippers and plungers come in contact with the material, when, owing to the pins J' coming in contact with the side frame of the table 6, they (the strippers and plungers) are prevented from a farther descent. The cutters H now descend to full extent, the springs 33 yielding as pressed by the frame G and the portions of the sheet that have been printed are punched out, it being noticed that the plungers primarily emboss said portions and are centered on the same, so as to firmly hold them while being embossed and cut. A form of the product is shown in dotted lines beneath Fig. 8. After the punching or cutting operation the frame G rises by a positive motion, thus elevating the cutters from the sheet of material, the outer sides being cleared by contact with the stripper and the inside by the plungers, forcing out the punched or shaped material. As the frame G further rises, the pressure of the springs on the stripper is lessened, so that the stripper and plunger rise with the frame and occupy the position shown in Fig. 7. The shaped articles are carried to the end of the apron 4, and reach the chute 34, by which they are directed toward the apron 7, and drop on pans or trays thereon, and are thereby carried to the end of said apron 7, from whence the trays or pans may be removed, it being noticed that the said apron 7 extends beyond the said aprons 4 and 35. The remainder of the sheet of material and scraps are carried over to the apron 35 and so directed elsewhere. As the shaft D revolves and the crank 15 follows the same, the arm 16, which is pivoted to said shaft D, is carried forward and backward, thus running the roller E over the inking or color bed or pad 18, and the upper face of the type, whereby the latter is properly supplied or fed with ink or color.

The types on the head may be of the form of letters, words, figures, ornaments, &c., and as the head rises and falls it comes in contact with the brush 26, and its faces are kept clear, as previously stated.

The bed or pad 18 is supplied with ink or color through the fountain D'.

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

1. In a machine of the character described, a driving-shaft, sprocket-wheels and chains, an inking-roller having its journal-bearings in horizontal sliding boxes, a rotary shaft operated by said driving-shaft, sprocket-wheels, and chains, a crank connected to said rotary shaft, an arm connecting said crank and sliding boxes, an inking-bed, an endless apron, a rotary type-wheel, and mechanism, substantially as described, for imparting a rotary motion to said type-wheel, said parts being combined substantially as and for the purpose set forth.

2. In a machine of the character described, the table 6, with endless apron 4, in combination with the rotary shaft 11, the sprocket-wheels 13, and endless chains 14, the shaft D, with crank 15, the arm 16, pivotally connected to said crank, the roller E, having its journal-boxes operating in guiding-box 17, the inking-bed 18, the type-wheel F, with mechanism, substantially as described, for imparting a rising and falling motion to the same, and mechanism, substantially as described, for rotating the said type-wheel, substantially as and for the purpose set forth.

ZACHARY TAYLOR HARTMAN.

Witnesses:
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A. P. JENNINGS.