(No Model.) 3 Sheets—Sheet 1.

J. BEUTEL.

CONFECTIONER'S DROPPING MACHINE.

No. 456,530. Patented July 21, 1891.

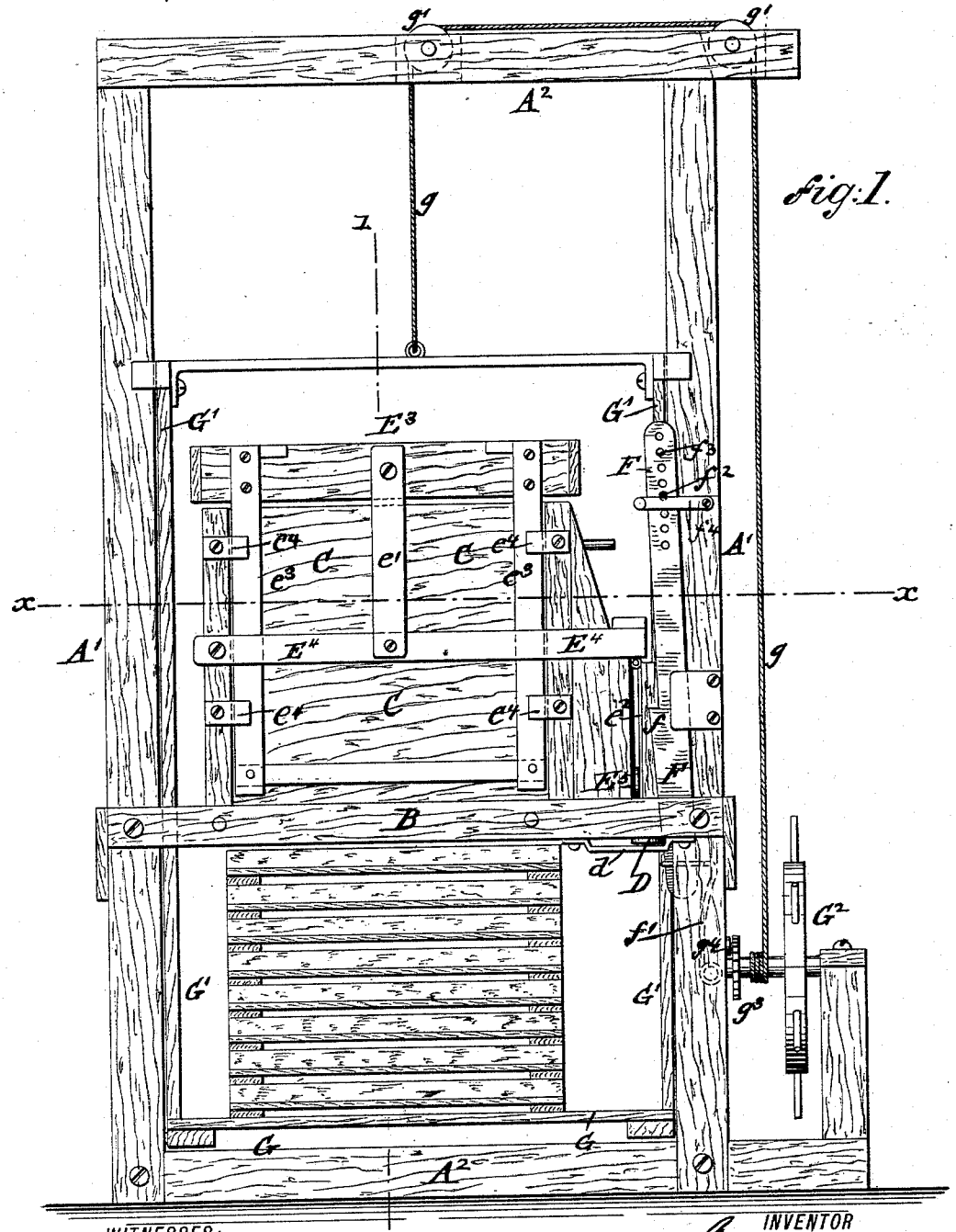

Fig. 1.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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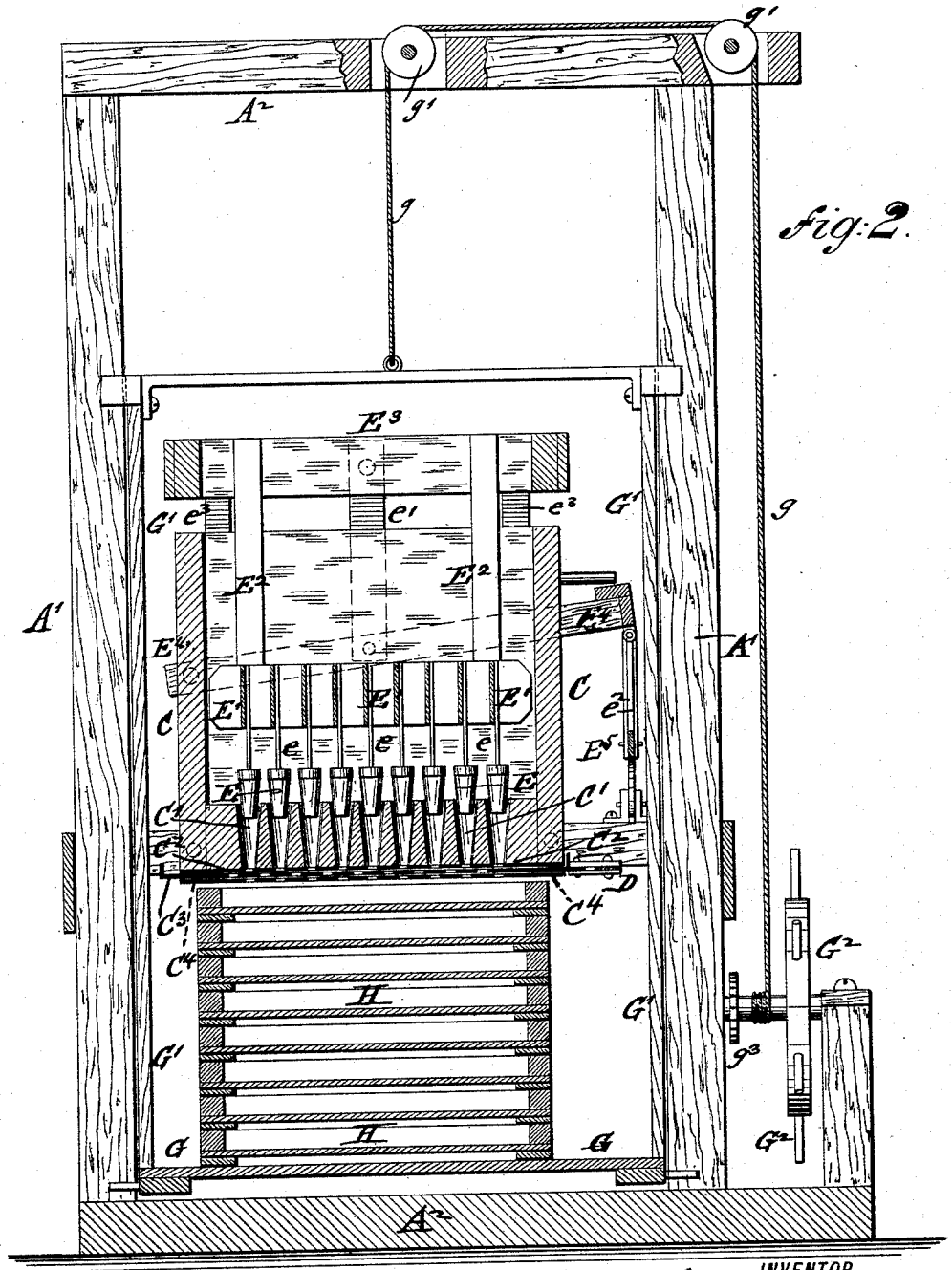

Fig: 2.

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(No Model.) 3 Sheets—Sheet 3.

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Fig. 3.

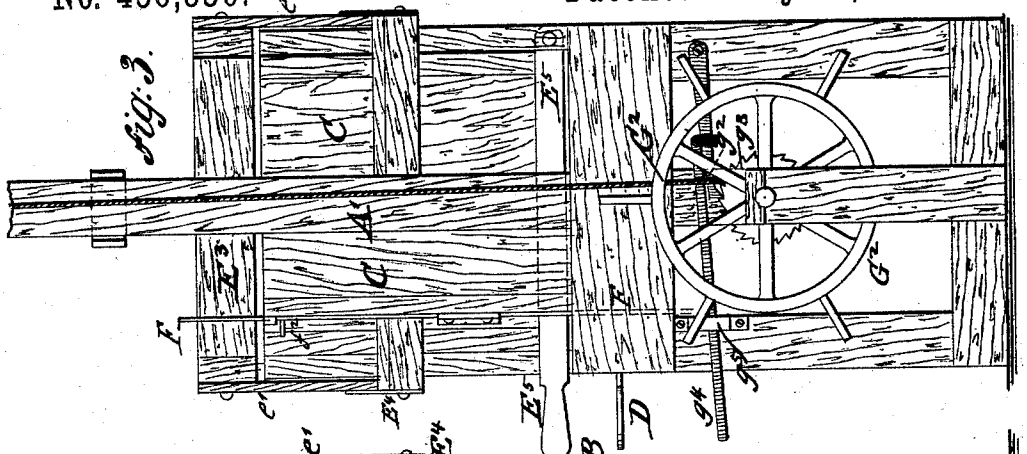


Fig. 4.

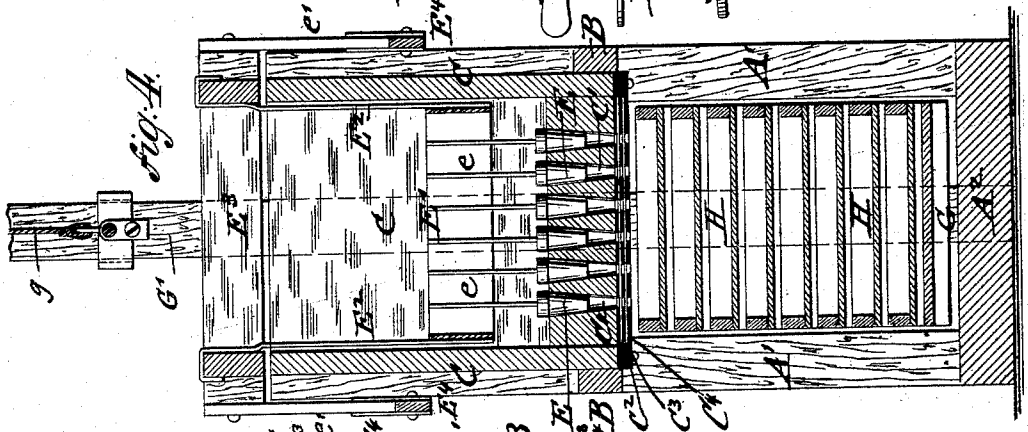
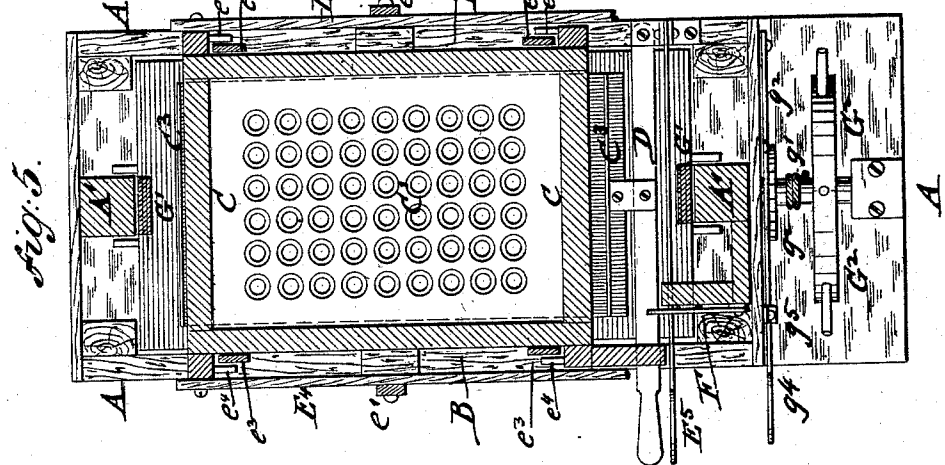


Fig. 5.



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UNITED STATES PATENT OFFICE.

JACOB BEUTEL, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ROBERT SCHROEDER, OF SAME PLACE.

CONFECTIONER'S DROPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 456,530, dated July 21, 1891.

Application filed January 6, 1890. Serial No. 336,052. (No model.)

To all whom it may concern:

Be it known that I, JACOB BEUTEL, of the city, county, and State of New York, a citizen of the United States, have invented certain new and useful Improvements in Confectioners' Dropping-Machines, of which the following is a specification.

This invention relates to an improved machine for dropping sugar-paste and other badly-flowing substances—such as are used in making gum, marshmallow, and cream or other drops or like articles—in such a manner that a full tray is completed at each operation of the machine, whereby the manufacture of such drops is considerably facilitated and accelerated; and the invention consists of a machine for dropping confectionery, said machine being composed of a receiver for the pasty mass, a number of dropping-tubes in the bottom of said receiver, a perforated slide-plate for opening or closing the discharge-orifices of said tubes, a series of stoppers corresponding to the number of the dropping-tubes, said stoppers being supported by a vertically-reciprocating frame, mechanism for raising and lowering said stoppers, so as to produce the opening or closing of the dropping-tubes, and mechanism for raising or lowering the tray-supporting platform, by which one tray after the other is moved up to the discharge-orifices of the dropping-tubes for receiving its full complement of drops.

The invention consists, further, of certain details of construction and combination of parts, as will be fully described hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improved machine for dropping confectionery. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a side elevation; Fig. 4, a vertical transverse section on the line 1 1, Fig. 1; and Fig. 5 is a horizontal section on the line x x, Fig. 1.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the supporting-frame of my improved machine for dropping confectionery, which frame is composed of upright standards A′ and of transverse top and bottom pieces A^2, which impart the necessary strength and rigidity to the supporting-frame.

On the transverse front and rear pieces B of the frame A is supported a receiver C, into which the flavored sugar-paste for making gum, marshmallow, cream, and other drops is placed. A number of conically-tapering holes are arranged in the bottom of the receiver C, which holes form dropping-tubes C′, as many dropping-tubes being arranged as there are individual molds in the trays to be filled.

To the bottom of the receiver C is attached a perforated sheet-metal plate C^2, which has as many holes as there are dropping-tubes. Below said plate is guided a perforated slide-plate C^3, which is movable, so that its holes can be placed into or out of register with the holes of the plate C^2. A third fixed plate C^4, having the same number of holes as the plate C^2, is arranged below the slide-plate C^3 and serves to guide the latter, in connection with the plate C^2, so as to facilitate the cutting off of the drops by the slide-plate C^3 as soon as the required quantity of paste has passed through the dropping-tubes into the tray below the same. The slide-plate C^3 is connected at one end to a horizontal lever D, which is pivoted at its rear end to the rear piece B, and which serves to impart motion to the plate C^3. The lever D is guided in a keeper d, attached to the front piece B of the frame A, as shown in Fig. 1. The conical dropping-tubes C′ in the bottom of the receiver C are opened or closed by a series of stoppers E, the shanks e of which are suspended from a supporting-frame E′, which is in turn hung by straps E^2 to a top frame E^3, that is arranged above the receiver C, as shown in Figs. 1, 2, 3, and 4. The top frame E^3 is connected by pivot-links e' to levers E^4, arranged at the front and rear walls of the receiver C, said levers being pivoted at the ends to the corner-posts of the receiver C and connected at their opposite ends by a pivot-link e^2 to a lever E^5, by which the entire stopper-supporting frame can be readily raised or lowered, together with the stoppers, so as to open or close the dropping-tubes, as shown, respect-

ively, in Figs. 2 and 3. The top frame E^3 is guided on the receiver C by means of guide-strips e^3, which are attached to the frame E^3 and retained by keepers e^4 on the outside of the receiver C. The lever E^5 is supported in raised position by a vertically-adjustable bar F, having a shoulder f, said bar being pressed inwardly by a spring f' at its lower end and retained at its upper end by a pin f^2, passed through one of the holes f^3 in the bar F, in connection with a keeper f^4. By adjusting the locking-bar F higher or lower the lever E^5 and thereby the stoppers in the receiver C are also adjusted higher or lower, so that a greater or smaller quantity of paste can be dropped from the receiver through the dropping-tube to the molds of the trays.

Below the receiver C is arranged a platform G, which carries a number of superposed mold-trays H, and which is attached to vertical slide-pieces G', that are guided on the upright standards A'. The platform G is raised or lowered by means of a cord g, that passes from the connecting top piece of the slide-pieces over guide-pulleys g' of the top piece A^2 down to the shaft of a hand-wheel G^2, which shaft turns in suitable bearings in the supporting-frame and carries a fixed ratchet-wheel g^3, that is engaged by a pawl g^2 for locking the shaft and thereby the platform G into any suitable position relative to the dropping-tubes of the receiver C. The pawl g^2 is strapped or otherwise attached to a lever g^4, that is guided in a suitable keeper g^5, as shown in Fig. 3, so that by lifting the lever g^4 the pawl g^2 is withdrawn from the teeth of the ratchet-wheel g^3, and thereby the shaft unlocked and the platform G lowered by its own weight. When the machine is started, the trays H, containing the starch-molds, are superposed one above the other and placed on the platform, as shown in Fig. 1. When the uppermost tray is filled by the dropping of the paste, it is removed and the platform raised sufficiently by turning the hand-wheel G^2 until the next tray arrives below the dropping-tubes. As the dropping operation continues, one tray after another is filled and removed until all the trays are filled. The pawl g^2 is then released from the ratchet-wheel g^3, so that the platform G returns to its lowermost position, when it is refilled with the necessary number of superimposed trays, so that the same operations can be repeated. When a tray is below the discharge-orifices of the dropping-tubes, the lever E^5, by which the stoppers are lifted, is raised and placed on the shoulder f of the locking-bar F. The slide-plate C^3 is during this time in closed position, so that no paste can escape from the dropping-tubes C'. The paste passes then into the conical dropping-tubes in the bottom of the receiver C and fills the same with the required quantity of paste to be dropped. The lever D is then pushed sidewise in the keeper d, so that the perforations of the slide-plate C^3 are placed into line with the holes of the plates C^2 and C^4. Simultaneously the locking-bar F is pushed sidewise by the action of the lever D against the tension of the spring f', and thereby the lifting-lever E^5 of the stoppers is released from the shoulder f, so that the supporting-frame E^3 and the stoppers E are dropped, the latter acting then like plungers to force the paste through the dropping-tubes and the perforations of the bottom plates C^2 C^4 and slide-plate C^3 into the molds of the tray. The stoppers E also serve to shut off any further supply of paste to the dropping-tubes. As soon as the dropping is completed the lever D, and thereby the perforated slide-plate C^3, is returned into its normally-closed position, so as to cut off the paste and close thereby the discharge-orifices of the dropping-tubes. The tray is then removed and the next tray placed below the receiver by lifting the platform G. The stoppers are then raised again by the lever E^5, so that a new quantity of paste is supplied to the dropping-tubes, which paste is dropped and cut off in the same manner as before described. A tray is thus filled with confectionery at one time, so that a larger quantity of confectionery can be dropped within a given time and at less expense than with the hand dropping devices heretofore in use.

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

1. The combination, with a receiver for the sugar-paste, of a series of dropping-tubes in the bottom of the same, a perforated slide-plate below said dropping-tubes, a lever for operating said slide-plate, a series of stoppers at the interior of the receiver, mechanism for raising and lowering said stoppers, and a locking-bar for supporting the stoppers in raised position, substantially as set forth.

2. The combination of a receiver for sugar-paste, a number of dropping-tubes in the bottom of the same, a perforated slide-plate below said receiver, a series of stoppers at the inside of the receiver, and mechanism for dropping the stoppers simultaneously with the opening of the discharge-orifices of the dropping-tubes by the slide-plate, substantially as set forth.

3. The combination of a receiver for the sugar-paste, dropping-tubes in the bottom of the receiver, a series of stoppers in the receiver, mechanism for raising or lowering said stoppers, so as to open or close the dropping-tubes, a perforated slide-plate below the dropping-tubes, a spring-actuated locking-bar having a shoulder for supporting the operating-lever of the stoppers, and a lever for operating simultaneously the slide-plate and the locking-bar, substantially as set forth.

4. The combination of a receiver for the sugar-paste, a series of dropping-tubes in the bottom of the same, vertically-reciprocating

stoppers in said receiver, a slide-plate for opening or closing the dropping-tubes, a platform below the receiver, a series of superimposed trays on said platform, and mechanism for raising or lowering the platform, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JACOB BEUTEL.

Witnesses
PAUL GOEPEL,
W. REIMHERR.