(No Model.) 3 Sheets—Sheet 1.

P. KNORPP.

MACHINE FOR MAKING CONFECTIONERY.

No. 454,278. Patented June 16, 1891.

Fig. 1.

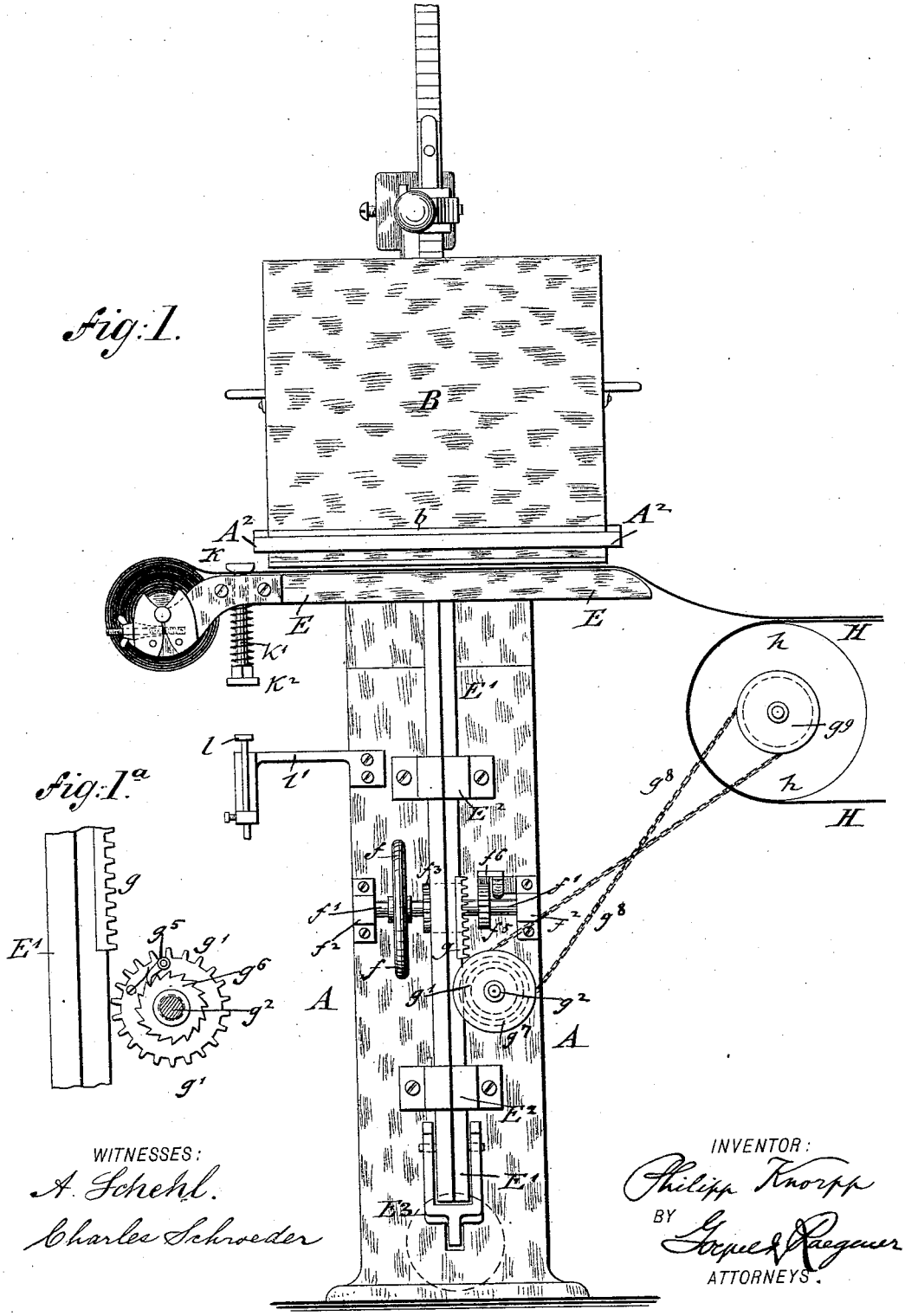


Fig. 1ª.

WITNESSES:
A. Schehl.
Charles Schroeder

INVENTOR:
Philipp Knorpp
BY
Goepel & Raegener
ATTORNEYS.

(No Model.) 3 Sheets—Sheet 2.

P. KNORPP.

MACHINE FOR MAKING CONFECTIONERY.

No. 454,278. Patented June 16, 1891.

Fig. 2.

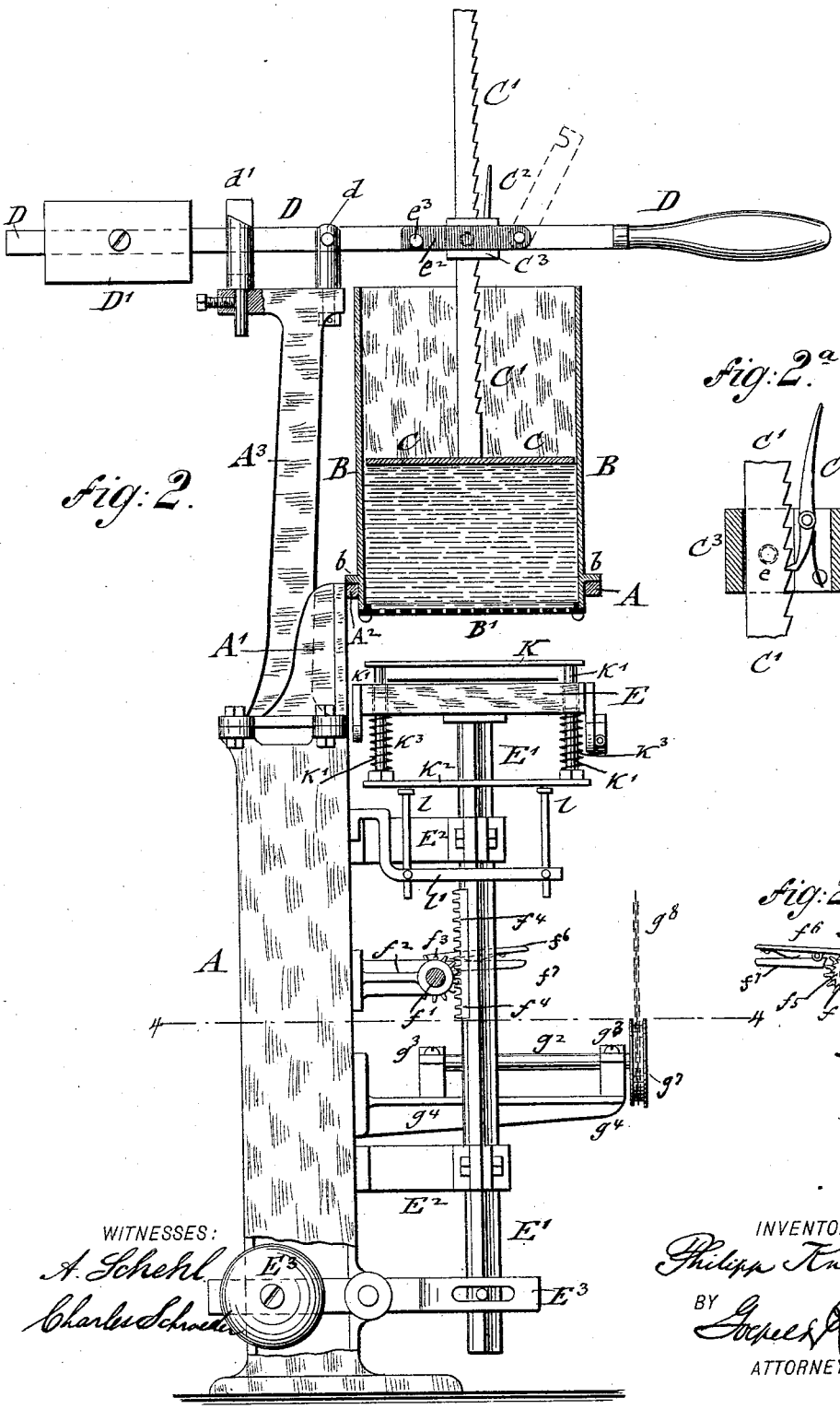


Fig. 2a.

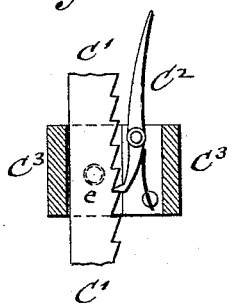
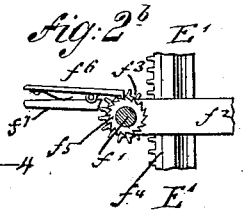


Fig. 2b.



WITNESSES:

A. Schehl

Charles Schroeder

INVENTOR:

Philipp Knorpp

BY Goepel & Wagener

ATTORNEYS.

(No Model.) 3 Sheets—Sheet 3.

P. KNORPP.

MACHINE FOR MAKING CONFECTIONERY.

No. 454,278. Patented June 16, 1891.

Fig. 3.

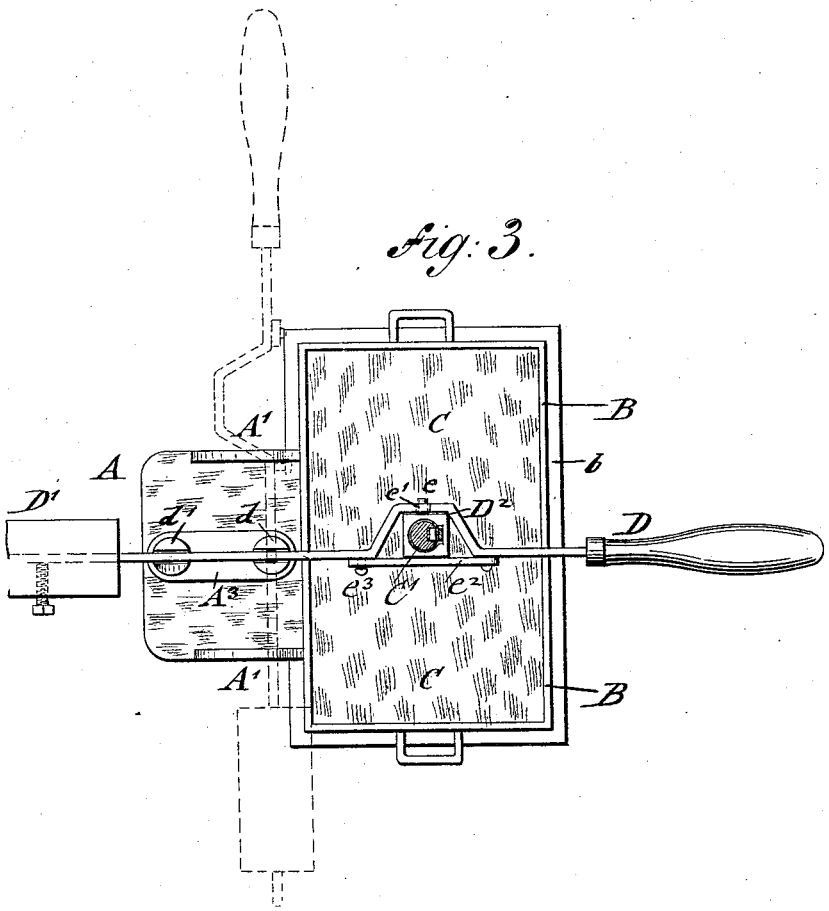
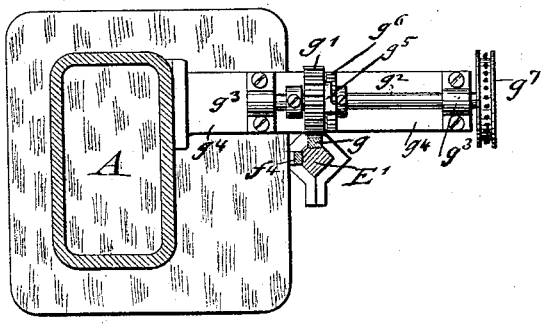


Fig. 4.



WITNESSES:
A. Schehl.
Charles Schroeder

INVENTOR:
Philipp Knorpp
BY Goepel & Wegener
ATTORNEYS.

UNITED STATES PATENT OFFICE.

PHILIPP KNORPP, OF STAPLETON, NEW YORK.

MACHINE FOR MAKING CONFECTIONERY.

SPECIFICATION forming part of Letters Patent No. 454,278, dated June 16, 1891.

Application filed January 12, 1891. Serial No. 377,509. (No model.)

To all whom it may concern:

Be it known that I, PHILIPP KNORPP, a citizen of the United States, residing at Stapleton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Machines for Making Confectionery, of which the following is a specification.

In the machine for making confectionery for which Letters Patent were granted to me jointly with Gustav A. Mayer, No. 407,935, dated July 30, 1889, it was found by practical use that considerable time was lost in removing the follower from the paste-receptacle whenever it was necessary to refill or clear the same, and also that considerable time was lost by turning the crank of the drive-roller of the endless conveying-apron by which the articles of confectionery that were deposited on the band or sheet of paper were conveyed off for drying.

The object of this invention is to so improve the machine heretofore patented by me jointly with Gustav A. Mayer that the follower of the paste-receptacle may be quickly removed, the receptacle readily removed from the machine for filling and cleaning and for interchanging the perforated bottom of the same by which the designs of the articles of confectionery are produced, and the motion of the conveying apron or belt accomplished automatically by the downward motion of the table of the machine; and for this purpose the invention consists, first, in an improved construction of the fulcrumed and weighted lever by which the follower is operated and its connection with the rack-bar of the follower and the supporting-frame; secondly, in a supporting-bracket frame for the detachable paste-receptacle, and, thirdly, in transmitting mechanism by which the conveying-apron is intermittently and automatically operated by the downward motion of the supporting-table, all of which will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improved machine for making confectionery. Fig. 1^a is a detail of the mechanism by which motion is transmitted from the vertically-guided table to the conveying-apron. Fig. 2 is a vertical transverse section of the machine, some of the parts being broken away. Fig. 2^a is a detail section showing the connection of the follower-operating lever with the rack-bar of the follower. Fig. 2^b is a detail side view of the pawl and ratchet-wheel mechanism for working or releasing the rack-bar of the table. Fig. 3 is a plan of the machine, showing the lever for operating the follower; and Fig. 4 is a plan view of the mechanism for transmitting motion to the conveying-apron, partly in horizontal section, on the line 4 4, Fig. 2.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the lower part or standard of the supporting-frame of my improved machine for making confectionery. To the lower part A are attached two brackets A′, which are made integral with an oblong horizontal frame A^2, that supports a receptacle B, into which the sugar or other paste from which the confectionery is made is placed. The paste-receptacle B rests by an exterior flange *b* on the frame A^2, and may be readily detached therefrom whenever it is necessary to clean the same or to interchange the perforated bottom B′, by which the different designs of confectionery are produced. The paste is forced through the perforations in the bottom B′ by means of a follower C, which is moved in downward direction in the receptacle B by a lever D, that is fulcrumed to a pin *d*, which is swiveled to the upper end of a standard A^3, that is attached to the lower part A of the supporting-frame. The rear part of the lever D is provided with an adjustable weight D′ and guided in front of the weight by a forked guide-pin *d*′, which is rigidly secured to the upper end of the standard A^3, one side of the pin being cut off, so as to permit the ready removing of the lever D from said guide-pin when the rear part of the same is raised sufficiently so that it can be lifted out of the guide-pin *d*′ and moved on its swiveled fulcrum from its normal position (shown in Figs. 2 and 3) to a position at right angles thereto, as shown in dotted lines in Fig. 3. When the follower-operating lever D is placed in a position at right angles to its normal position

and parallel to the paste-receptacle B, the latter can be readily removed from its supporting-frame or replaced thereon.

The follower C is provided with a rack-shaped stem C′, which is engaged by a spring-actuated pawl C^2, that is applied to a sleeve C^3, which surrounds the rack-bar C′, and which is supported at one side by a pin *e* in the hole *e′* of a bent or offset portion D^2 of the lever D, as shown clearly in Fig. 3, said sleeve being retained in the bent portion D^2 by a latch e^2, which is pivoted to the lever D and extended sidewise of the sleeve C^3 across the bent or offset portion D^2, so as to engage by its recessed end a pin e^3 of the lever, as shown in Figs. 1, 2, and 3. When it is desired to detach the rack-bar C′ of the follower C from the operating-lever D, the latch-piece e^2 is lifted into the position shown in dotted lines in Fig. 2, upon which the lever D can be swung in lateral direction on its fulcrum *d* after it is first lifted out of its forked guide-pin *d′* and detached from the pin *e* of the sleeve C^3, it being finally placed in the position shown in dotted lines in Fig. 3. The sleeve C^3 is retained by the pawl C^2 on the rack-bar C′, the follower C being then readily removed from the paste-receptacle B, so as to permit the filling of the same with a new quantity of paste. The follower C is then replaced, the sleeve C^3 applied to the lower part of the rack-bar C′, and the lever D connected to the sleeve by the pin *e* and locking-latch e^2, as shown in Fig. 2 and in full lines in Fig. 3. By a downward pressure on the lever D the pawl C^2 engages the rack-bar of the follower, so that the latter is pressed on the paste and a certain quantity of the same ejected through the perforations of the bottom B′. The sleeve C^3 is gradually moved up on the rack-bar, so as to engage step by step the teeth of the same as the follower is gradually moved in downward direction by the gradually-diminishing quantity of paste in the receptacle.

Below the paste-receptacle B is arranged a table E, that is supported on a vertical guide-rod E′, which is guided in sleeves at the front ends of bracket-arms E^2, that are attached to the lower part A of the supporting-frame. The guide-rod E′ is preferably made of square cross-section, the guide-sleeves being made of corresponding shape, so as to prevent any lateral shifting of the table E. The lower end of the vertical guide-rod E′ is connected with the forked front end of a fulcrumed and weighted lever E^3, which imparts a lifting action to the table, so as to move the same in upward direction into contact with the bottom of the receptacle B. The lever E^3 is fulcrumed to the lower part A of the supporting-frame near the base of the same. The table E is moved in downward direction by means of a hand-wheel *f* on a shaft *f′*, that turns in bearings of the bracket-arms f^2, attached to the supporting-frame A. The shaft *f′* carries a pinion f^3, which meshes with a rack f^4 at the rear side of the guide-rod E′, as shown in Fig. 2. By turning the hand-wheel *f* the pinion f^3 meshes with the rack-bar f^4 on the guide-rod E′, so that the table is moved in downward direction against the pressure of the weighted lever E^3. On the shaft *f′* is arranged a ratchet-wheel f^5, which is engaged by a pivoted and spring-actuated pawl f^6, the shank of which is grasped by the hand in connection with the fixed shank f^7, as shown in Fig. 2ᵇ, so that on depressing the handle of the pawl f^6 the latter is disengaged from the teeth of the ratchet-wheel f^5, which permits the table being readily moved downward by the hand-wheel *f*. When the table is lowered as far as required, the pawl f^6 is released, so as to re-engage the ratchet-wheel f^5 and lock the table in position until the ratchet-wheel f^5 is released again by pressure on the pawl f^6, so that the table E can be returned by its weighted lever E^3 into its position below the bottom of the paste-receptacle B. The guide-rod E′ is also provided at its side with a second rack-bar *g*, which meshes with a gear-wheel *g′*, that is loosely mounted on a shaft g^2, which turns in bearings g^3 of a bracket-arm g^4 attached to the lower part A of the supporting-frame, as shown clearly in Fig. 2. To the gear-wheel *g′* is applied a spring-pawl g^5, which engages with the ratchet-wheel g^6, that is keyed to the shaft g^2, said pawl-and-ratchet mechanism producing the turning of the shaft g^2 when the rack *g* meshes with the gear-wheel *g′* by the downward motion of the guide-rod E′, but permitting the free turning of the gear-wheel *g′* on the shaft g^2, so as to follow the motion of the rack-bar *g* when the guide-rod E′ is returned with the table in upward direction. To the front end of the shaft g^2 is applied a transmitting sprocket-wheel g^7, which imparts by a crossed chain g^8 motion to a sprocket-wheel g^9 on the shaft of the driving-roller *h* of an endless conveying apron or belt H, that is supported in a suitable manner on a separate frame. (Not shown in the drawings.) The downward motion of the guide-rod E′ imparts automatically, by the transmitting mechanism described, an intermittent forward motion to the conveying-apron H, while during the upward motion of the guide-rod no motion is imparted to the same.

The table E is provided at the left-hand end with suitable bearings for supporting a roll of paper on which the confectionery is dropped from the paste-receptacle as the sheet of paper is intermittently moved forward below the same. The table E is provided near the bearings of the roll of paper with a transverse bar or keeper K, that is applied to the upper ends of two guide-rods *k′*, which pass through guide-holes of the table, and which are connected at their lower ends by a transverse bar k^2. Spiral springs k^3 are interposed between the under side of the table E and the lower bar k^2, said springs serving to press the transverse keeper *k* into

contact with the top surface of the table as soon as the lower bar k^2 is released by fixed stops l, which are adjustably supported in a bracket-arm l', attached to the lower part of the supporting-frame. As soon as the table E is raised and the bar k^2 moved away from the stops l the spiral springs k^3 cause the downward motion of the keeper k, so that the same presses on the sheet of paper that is passed over the upper surface of the table E and holds it thereby in position thereon. When the table is lowered and the bar k^2 brought in contact with the stops l, the keeper k is raised, and thereby the paper released, so that the same can be moved forward over the table by the apron H and the driving-roller h and a new section of paper placed below the receptacle B. The friction of the paper on which the confectionery is deposited by the operation of the machine with the upper part of the conveying-apron H produces the automatic forward feed of the paper over the table E when the same is sufficiently lowered so that the keeper K is raised by the action of the stops l. The continuous sheet of paper is properly perforated at certain intervals, according to the size of the sheet required for the articles of confectionery, so that the paper can be readily separated into pieces of proper length after the articles have been transferred to the same and dried. From the conveying-apron H the paper is removed with the confectionery thereon and placed on trays which are transferred into a suitable drying-chamber for drying the articles deposited thereon. The articles of confectionery are preferably packed with this paper, which acts as a foundation for said articles, so as to prevent the breaking of the same until they are removed for use.

The operation of the machine is about the same as the machine heretofore patented, No. 407,935, with this difference, that the motion of the apron is automatically transmitted from the guide-rod E′, so that the time which was heretofore required for turning the crank of the driving-roller, and thereby moving the conveying-apron and feeding the paper over the table E, is saved, while the duties of the attendant who operates the machine are simplified thereby. The circumference of the sprocket-wheel of the driving-roller has to be in proportion to the length of the paper at the time on the table, so that by one full rotation of the driving-roller the same length of paper is fed forward and placed below the receptacle ready to receive the next set of confectionery thereon.

The confectionery produced by the machine is from a paste composed of sugar, beaten egg, and a suitable flavoring extract, which can be made into a variety of different shapes.

The machine can also be used for ornamenting other articles, such as crackers and the like, in which case the size of the machine has to be adapted to the size of the trays on which said confectionery is baked in the oven, so that the same can be placed directly on the table and ornamented by the action of the machine.

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

1. In a machine for making confectionery, the combination of a paste-receptacle, a follower in the same provided with a rack-bar, a lever for operating said follower, said lever being detachably connected with said rack-bar, a swiveled pin to which said lever is fulcrumed, and a forked guide-pin back of said fulcrum, said forked guide-pin being made shorter at one side, substantially as set forth.

2. The combination, in a machine for making confectionery, of a paste-receptacle, a follower in the same having a rack-bar, a sleeve surrounding said rack-bar, a spring-actuated pawl applied to said sleeve and adapted to engage said rack-bar, a fulcrumed and weighted operating-lever having a bent or offset portion that is connected to said sleeve, and a latch pivoted and locked to the lever at the other side of the sleeve, substantially as set forth.

3. The combination, in a machine for making confectionery, of a vertically-reciprocating table, a vertical guide-rod attached to said table, a rack-bar on said guide-rod, an intermediate shaft having a loose pinion meshing with the rack on said guide-rod, a pawl-and-ratchet mechanism connecting the loose gear-wheel with the intermediate shaft, an endless conveying-apron supported sidewise of the table, and a chain and sprocket-wheel transmission between the intermediate shaft and the driving-roller of the apron, whereby said apron is intermediately operated during the downward motion of the guide-rod of the table, 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.

PHILIPP KNORPP.

Witnesses:
PAUL GOEPEL,
MARION HALL.