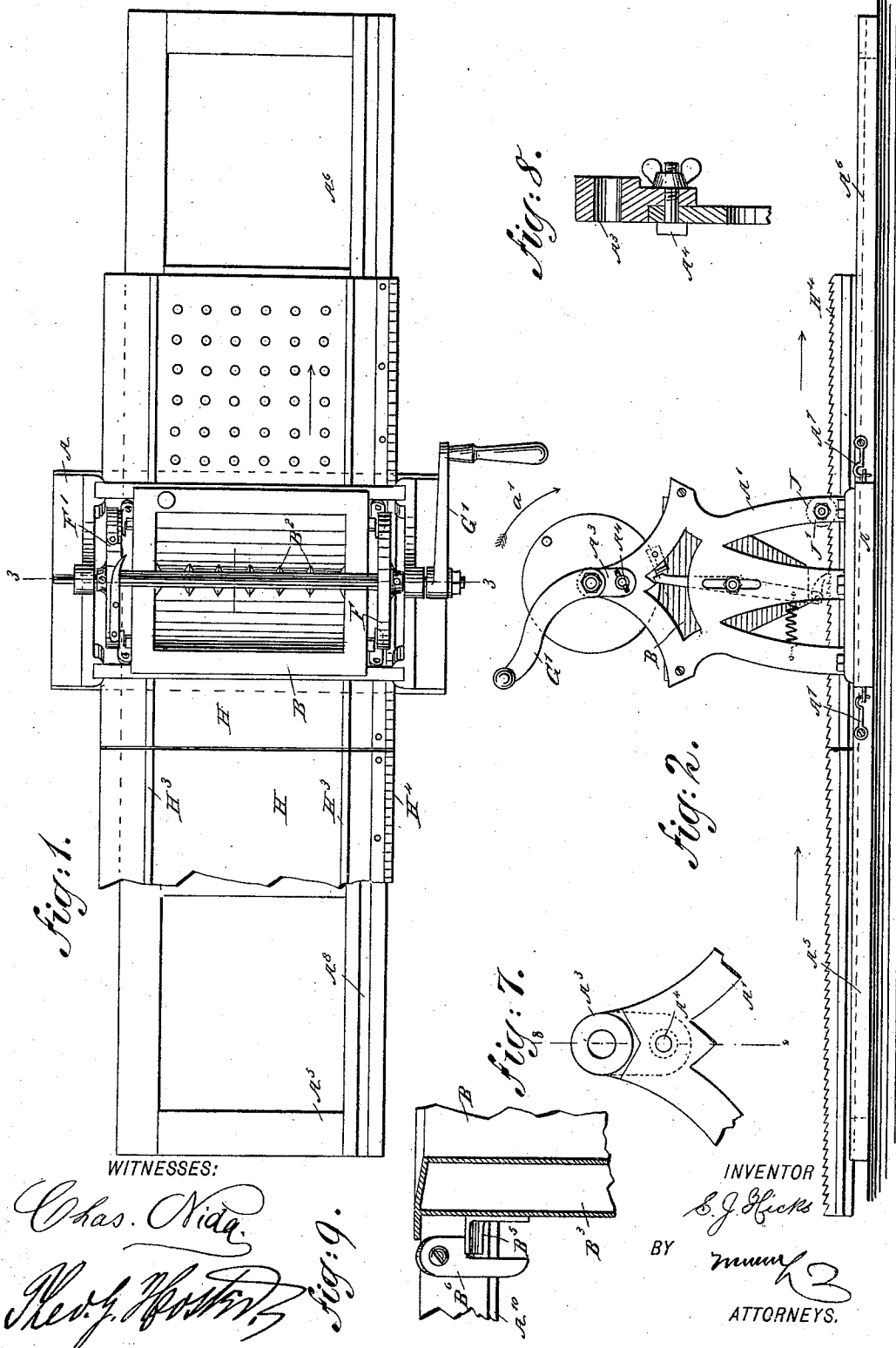


2 Sheets—Sheet 1.

No. 572,423.

Patented Dec. 1, 1896.



(No Model.)

2 Sheets—Sheet 2.

S. J. HICKS.
CONFECTIONERY MACHINE.

No. 572,423.

Patented Dec. 1, 1896.

Fig: 3.

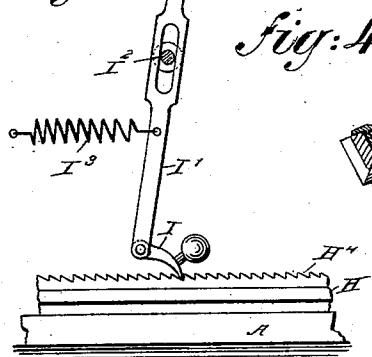
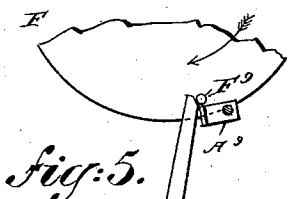
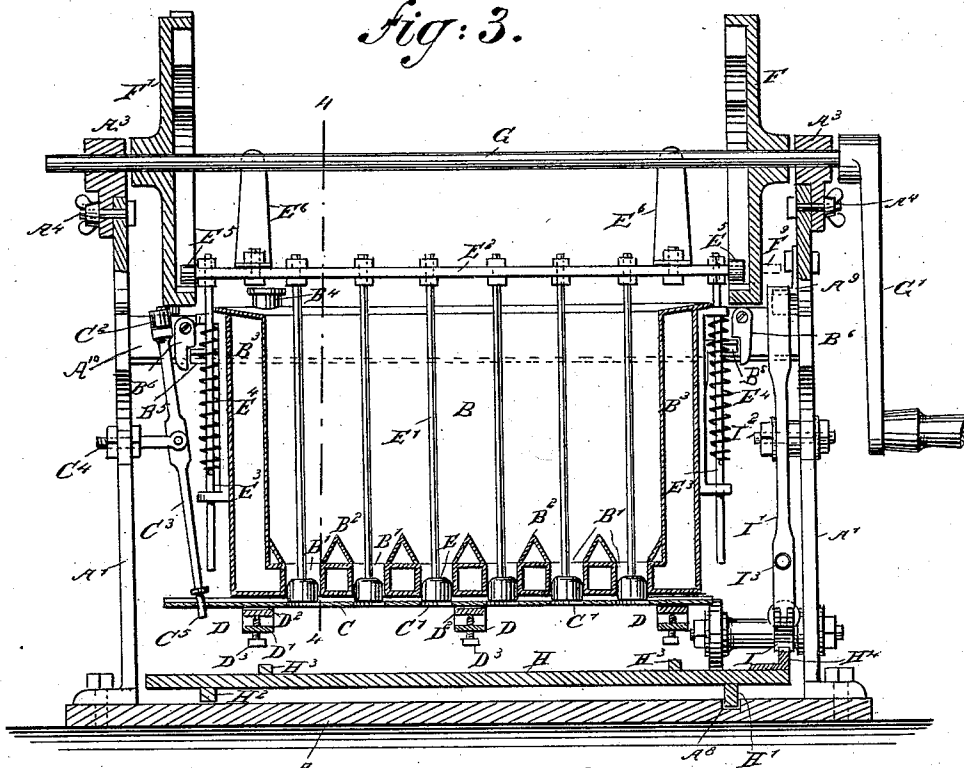


Fig: 4.

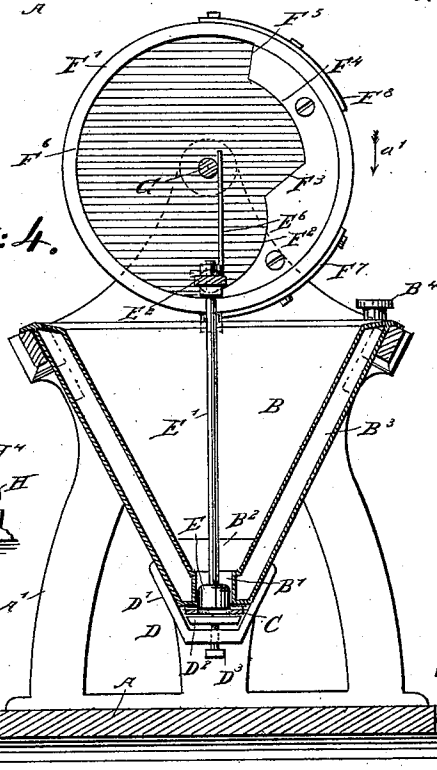
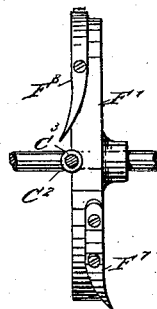


Fig: 6.



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SIMEON J. HICKS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE HICKS MANUFACTURING COMPANY, OF ILLINOIS.

CONFECTIONERY-MACHINE.

SPECIFICATION forming part of Letters Patent No. 572,423, dated December 1, 1896.

Application filed January 22, 1896. Serial No. 576,440. (No model.)

To all whom it may concern:

Be it known that I, SIMEON J. HICKS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Confectionery-Machines, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved confectionery-machine
10 which is comparatively simple and durable in construction, arranged to be readily taken apart for cleaning or repairing purposes, and more especially designed for forming wafers or patties in a cheap and economical manner.

15 The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying
20 drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement with parts broken out. Fig. 2 is a side elevation
25 of the same. Fig. 3 is an enlarged transverse section of the same on the line 3 3 of Fig. 1. Fig. 4 is an enlarged sectional side elevation of the improvement on the line 4 4 of Fig. 3. Fig. 5 is an enlarged side
30 elevation of the device for moving the tables. Fig. 6 is an enlarged plan view of the cam for operating the slide. Fig. 7 is an enlarged side elevation of the bearing for the main shaft. Fig. 8 is a transverse section
35 of the same on the line 8 8 of Fig. 7, and Fig. 9 is an enlarged transverse section of the fastening device for holding the hopper in place on the frame.

The improved confectionery-machine is
40 provided with a suitably-constructed base A, on which are secured the standards A', supporting a hopper B, adapted to receive the material to be formed into wafers, patties, or other like articles. The sides of the hopper
45 B are inclined, as illustrated in Fig. 4, to form at their lower ends a series of chambers B', one placed alongside the other and divided one from the other by peaked partitions B², as is plainly illustrated in Fig. 3. The
50 lower ends of the chambers B' are preferably made cylindrical and are normally closed by

a transversely-extending slide C, fitted to slide in suitable bearings D, secured to the sides of the hopper B. In the slide C are arranged apertures C', adapted to register with
55 the lower ends of the chambers B', so that when the slide C is shifted, as shown in Fig. 3, then the said apertures register with the lower ends of the chambers B' to permit the plungers E, reciprocating in the said cham-
60 bers, to push the articles through the chambers and through the said openings C' upon a discharge-table, as hereinafter more fully described.

The plungers E are secured on plunger-
65 rods E', extending upwardly in the hopper B and fastened at their upper ends to a cross-bar E², provided with guide-rods E³, mounted to slide in suitable bearings attached to the ends of the hopper B. A spring E⁴, actuated
70 by each guide-rod E³, serves to impart a downward motion to the bar E² and plungers E, so as to compress the material in the chambers B' and to finally force the pressed article
75 through the lower ends of the chambers and openings C' to the traveling table.

On the ends of the bar E² are arranged friction-rollers E⁵, in engagement with cams F and F', secured on a transversely-extending
80 main shaft G, journaled in removable bearings A³, fastened by bolts A⁴ to the upper ends of the standards A'. On one outer end of the shaft G is secured a crank-arm G', adapted to be turned by the operator in the
85 direction of the arrow a', (see Fig. 2,) so as to turn the said shaft G and to cause the cams F and F' to impart the desired motion to the bar E² to raise and lower the plungers E in the chambers B' and the hopper B.

Each of the cam-wheels F and F' is provided
90 with a cam-surface F², (see Fig. 4,) extending inwardly from the periphery of the cam-wheel, to then terminate in the straight and outwardly-extending incline F³, which in turn
95 terminates in the concentric cam-face F⁴, terminating in the incline F⁵, leading to the inside of the rim F⁶ of the cam-wheel and concentric with the face F⁴.

Now it will be seen that when the shaft G is turned in the direction of the arrow a' the
100 friction-rollers E⁵, in traveling up the cam-faces F², cause a rising and upward sliding

of the bar E^2 , so as to lift the plungers E out of the chambers B' and a suitable distance upward in the hopper B to permit the material contained in the latter to fill the chambers B' . When the friction-rollers E^5 finally travel down the inclines F^3 , they permit the springs E^4 to draw the bar E^2 downward, so as to bring the plungers E to the upper ends of the chambers B' , thereby cutting off the material contained in the hopper B from the said chambers and at the same time pressing the material already contained in the chambers. During the further revolution of the cam-wheels F and F' the friction-rollers roll over the concentric faces F^4 , so that the plungers E remain stationary; but during this time the slide C is shifted to bring its openings C' in register with the chambers B' . When the friction-rollers E^5 finally travel down the inclines F^5 upon the inner surfaces of the rims F^6 , then the plungers remain stationary in the lower part of the chambers B' , as indicated in Fig. 4, to be finally raised again when the said friction-rollers travel up on the cam-faces F^2 .

In order to properly guide the bar E^2 , I provide the latter with arms E^6 , extending upwardly against the shaft G . In order to impart the necessary swinging motion to the slide C from the shaft G , I provide the cam-wheel F' on its periphery with the two cam-arms F^7 and F^8 , adapted to alternately act on a friction-roller C^2 , journaled on the upper end of a lever C^3 , fulcrumed on a stud C^4 , held vertically adjustable on one of the standards A' . The lower end C^5 of this lever C^3 engages an opening in one end of the slide C , so that when the cam-arms F^7 and F^8 alternately engage the friction-roller C^2 they impart a swinging motion to the lever C^3 , so as to shift the slide C inward or outward to bring the openings C' into register with the chambers B' or to cut off the said chambers, as the case may be. This operation takes place once every revolution of the shaft G .

The bearings D , in which the slide C is mounted, are preferably of the construction shown in detail in Fig. 4, each bearing being formed of a V-shaped bracket D' , secured at its ends to the sides of the hopper B . In each bracket is arranged a transversely-extending plate D^2 , adapted to press the under side of the slide C , the said plate being supported on a set-screw D^3 , so that when the latter is screwed up the plate D^2 is moved upwardly, so as to hold the slide C in proper contact with the under side of the hopper B .

The articles pressed out of the chambers B' by the plungers E drop upon the table H , mounted to slide on the top of the base A between the standards A' . A series of such tables H are employed, one behind the other, the tables being automatically shifted forward by mechanism actuated from the cam-wheel F , as hereinafter more fully described.

Each table H is provided on its under side with a longitudinally-extending flange H' ,

fitted into a correspondingly-shaped groove A^8 , formed in the top of the base A , and extension-bases A^5 and A^6 , fastened by catches A^7 to the sides of the said base A , as is plainly illustrated in Fig. 2. A second flange H^2 , parallel to the flange H' , rests on the top of the base A and extension-bases A^5 and A^6 , so as to hold the said table H in a horizontal position.

On the top of the table H are arranged two longitudinally-extending flanges H^3 , located a suitable distance apart to accommodate the row of articles pressed down simultaneously by the several plungers E . On one side of each table H is arranged a toothed bar H^4 , engaged by a pawl I , hung on the lower end of a lever I' and fulcrumed on a vertically-adjustable stud I^2 , held in the standard A' near the crank-arm G' , as illustrated in Fig. 3.

The upper end of the lever I' is adapted to be engaged by a pin F^9 , projecting from the web of the cam-wheel F , so that upon every revolution of the said cam-wheel F the pin F^9 pushes on the lever I' to cause the pawl I to act on the bar H^4 , so as to shift the table H forward a sufficient distance to permit a second row of articles to be deposited on the said table H during the next revolution of the shaft G .

A spring I^3 , secured on the standard A' and connected with the lower end of the lever I' , returns the latter to its normal position after the pin F^9 has passed the upper end of the lever I' . A stop A^9 on the standard A' is engaged by the upper end of the said lever I' after the pin F^9 has passed and the lever has returned to its normal position.

The hopper B is preferably provided on its sides and ends with a water-jacket B^3 , having an inlet B^4 for the introduction of hot water, so as to keep the inner walls of the hopper B sufficiently warm to prevent the material from cooling too quickly and from adhering to the walls. The hopper B is removably held in cross-bars A^{10} , connecting the standards with each other, and the said hopper is securely held in place on the said cross-bars by pivoted catches B^6 , engaging lugs B^5 , fastened to the sides of the hopper B , as indicated in Figs. 3 and 9.

A friction-roller J , journaled on a stud J' on one of the standards A' , engages the top surface of the table H , so as to prevent the latter from moving too far when actuated by the pawl I .

When the machine is in operation and the hopper B is filled with the material to be formed into wafers, patties, and like articles, then the plungers E are moved upward on turning the shaft G to permit the material to fill the chambers B' during the time the slide C is closed, and then the plungers move downward to press the material in the chambers, and the lever C^3 is actuated by the cam-wheel F' to move the slide C outward into the open position shown in Fig. 3 after the plungers E move into their lowermost position—that is, downward in the chambers to push the ma-

terial out of the chambers upon the table H below. The latter is now moved forward by the action of the lever I' and pawl I on the toothed bar H⁴, and then the above-described operation is repeated by the slide being first moved outward, after which the plungers are raised, and so on, as previously mentioned.

By loosening the screws or bolts A⁴ the bearings A³ can readily be detached from the standards A' to permit of conveniently removing the main shaft and cam-wheels, as well as the hopper B, to conveniently clean and repair the several parts whenever deemed necessary.

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

1. A confectionery-machine, provided with a hopper formed with chambers, a slide for closing the said chambers, and formed with openings adapted to register with the chambers, and bearings for the said slide and each provided with a plate, and a screw for adjusting the said plate, to hold the latter in contact with the slide, substantially as shown and described.

2. A confectionery-machine, comprising a hopper, formed with a series of chambers, an apertured slide forming a bottom for the said chambers, and adapted to open the latter upon the shifting of the slide, plungers operating in the said hopper and chambers, a spring-pressed bar carrying the said plungers and provided on its ends with friction-rollers, cams mounted on a driving-shaft and engaging the said friction-rollers, one of the said cams being provided with additional cam-arms, and a lever adapted to be engaged by the said cam-arms and connected with the

said slide, substantially as shown and described.

3. In a confectionery-machine, the combination of a frame, a hopper thereon having chambers for the passage of the molded articles, a main shaft extending above the hopper, plungers movable in the chambers of the hopper, a cross-bar uniting said plungers to move in unison, and cams on the main shaft to engage the opposite ends of the cross-bar to actuate said plungers, substantially as set forth.

4. In a confectionery-machine, the combination of a frame, a hopper therein having chambers for the passage of the molded articles, a main shaft journaled in the frame above the hopper, plungers movable in the chambers of the hopper, a cross-bar uniting the plungers to move in unison, a spring to move the plungers in one direction, and cams on the main shaft to engage opposite ends of the cross-bar to move the plungers in the other direction, substantially as set forth.

5. In a confectionery-machine, the combination of a frame, a hopper therein having chambers for the passage of the molded articles, plungers movable in the chambers of the hopper, a cross-bar uniting the plungers to move in unison, guide-bars connected to the ends of the cross-bar and guided on the ends of the hopper, a main shaft journaled in the frame above the hopper, and cams on the main shaft to engage the cross-bar and actuate the plungers, substantially as set forth.

SIMEON J. HICKS.

Witnesses:

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JOHN W. HICKS.