

(No Model.)

5 Sheets—Sheet 1.

D. M. HOLMES.
MACHINE FOR COATING CONFECTIONERY.

No. 492,205.

Patented Feb. 21, 1893.

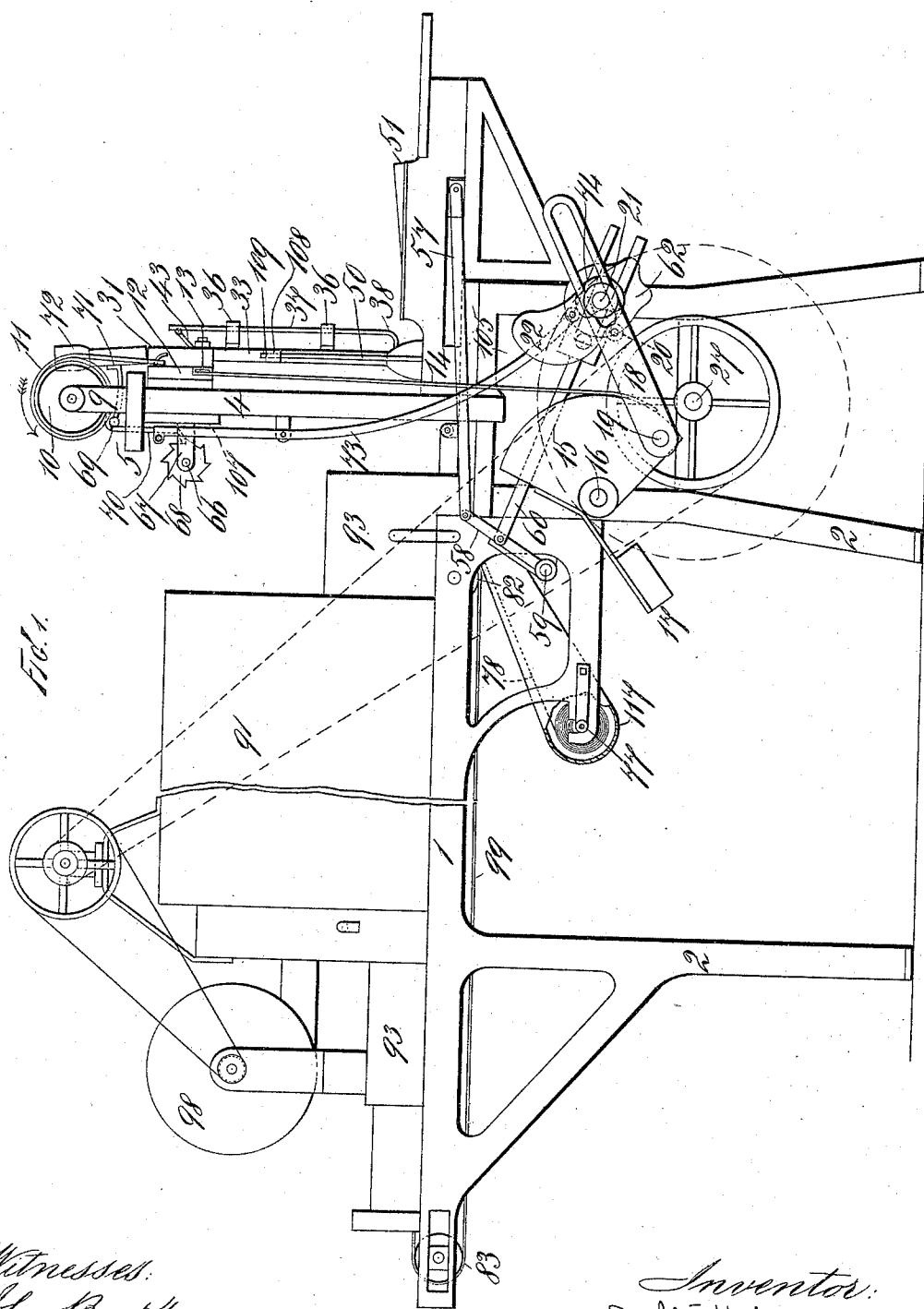


FIG. 1.

Witnesses:
John Buckler,
Wm. Dickson.

Inventor:
D. M. Holmes,
By A. M. Pierce,
Attorney.

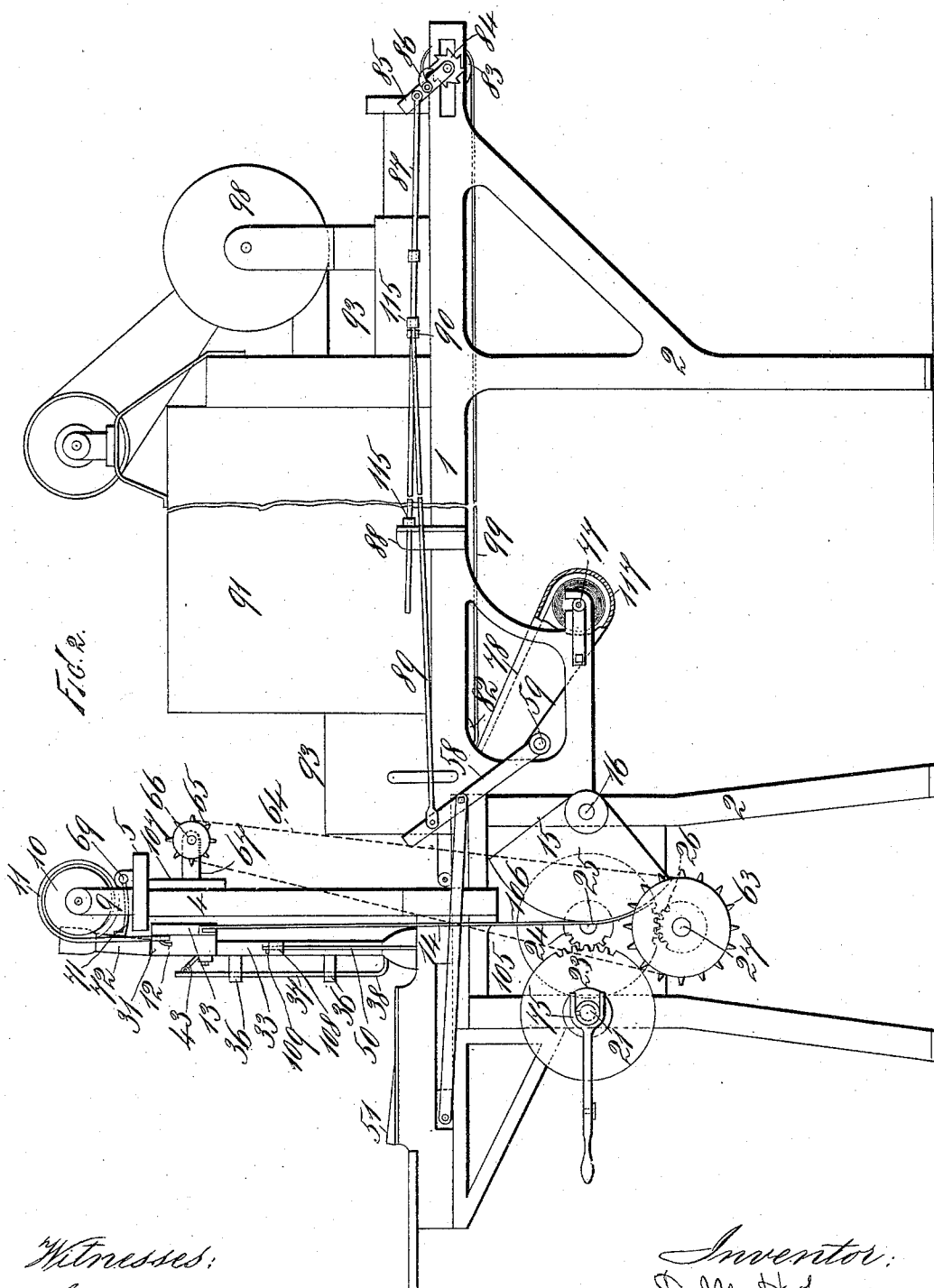
(No Model.)

5 Sheets—Sheet 2.

D. M. HOLMES.
MACHINE FOR COATING CONFECTIONERY.

No. 492,205.

Patented Feb. 21, 1893.



Witnesses:
John Buckler,
Wm. Dickson.

Inventor:
D. M. Holmes.
By a. m. Pierce.
Attorney.

(No Model.)

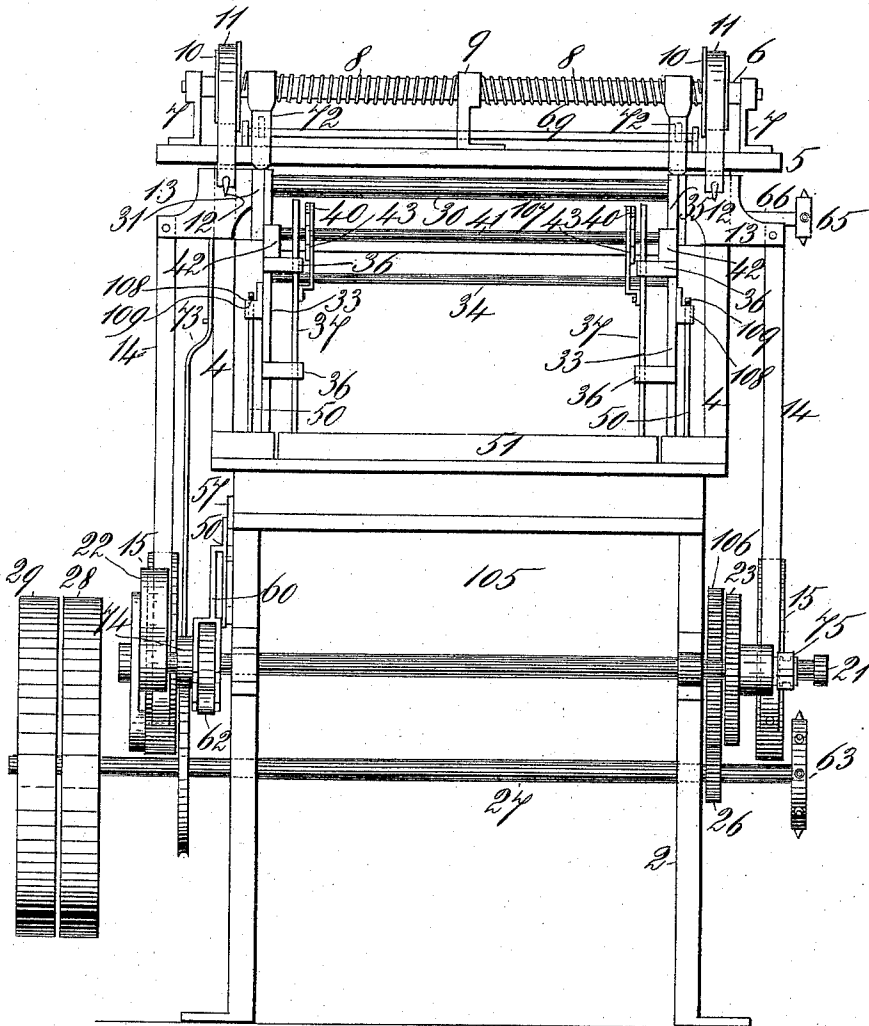
5 Sheets—Sheet 3.

D. M. HOLMES.
MACHINE FOR COATING CONFECTIONERY.

No. 492,205.

Patented Feb. 21, 1893.

Fig. 3



Witnesses:
John Buckler,
Wm. Dickson

Inventor:
D. M. Holmes,
By A. M. Pierce,
Attorney.

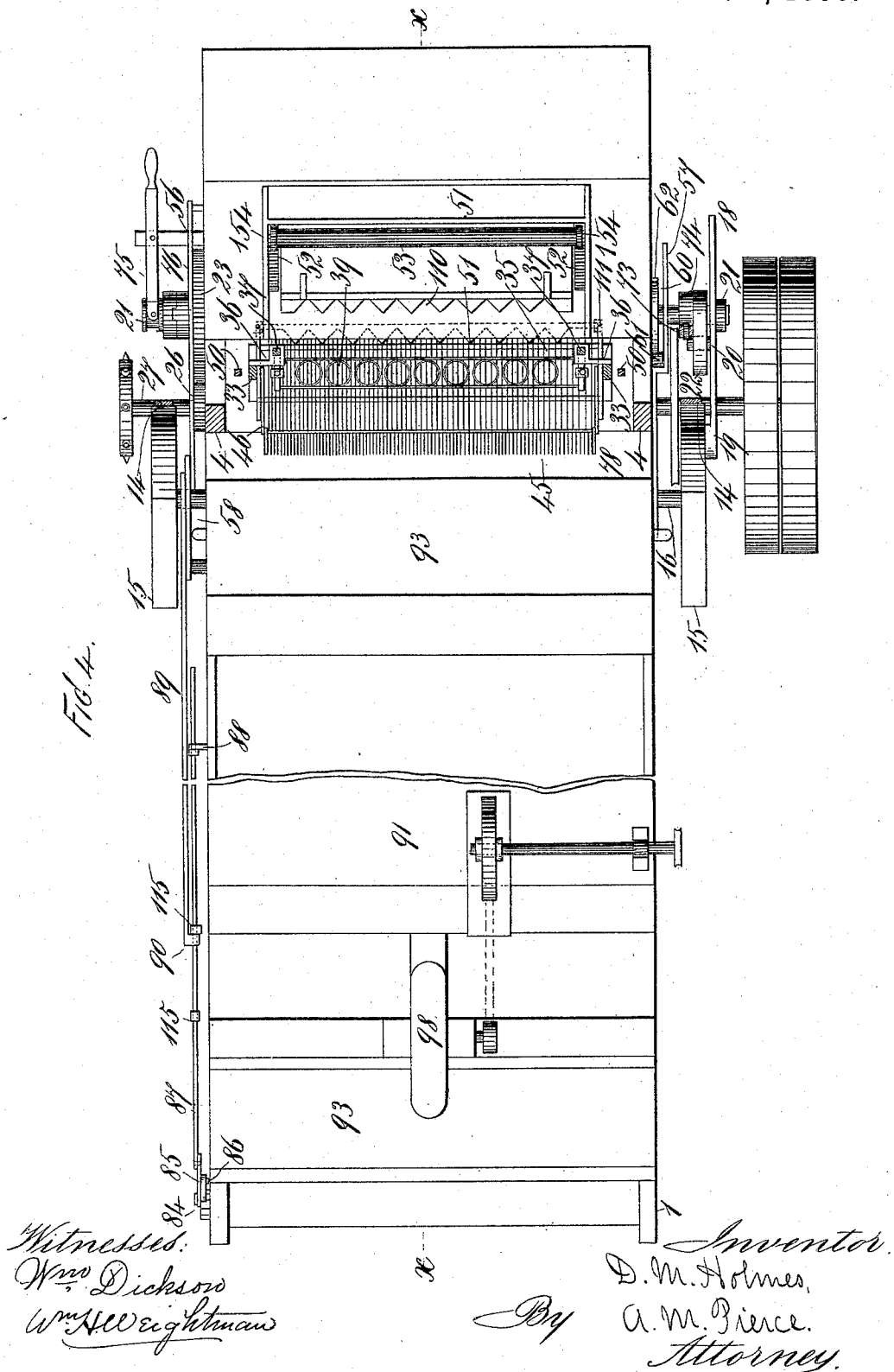
(No Model.)

5 Sheets—Sheet 4.

D. M. HOLMES.
MACHINE FOR COATING CONFECTIONERY.

No. 492,205.

Patented Feb. 21, 1893.



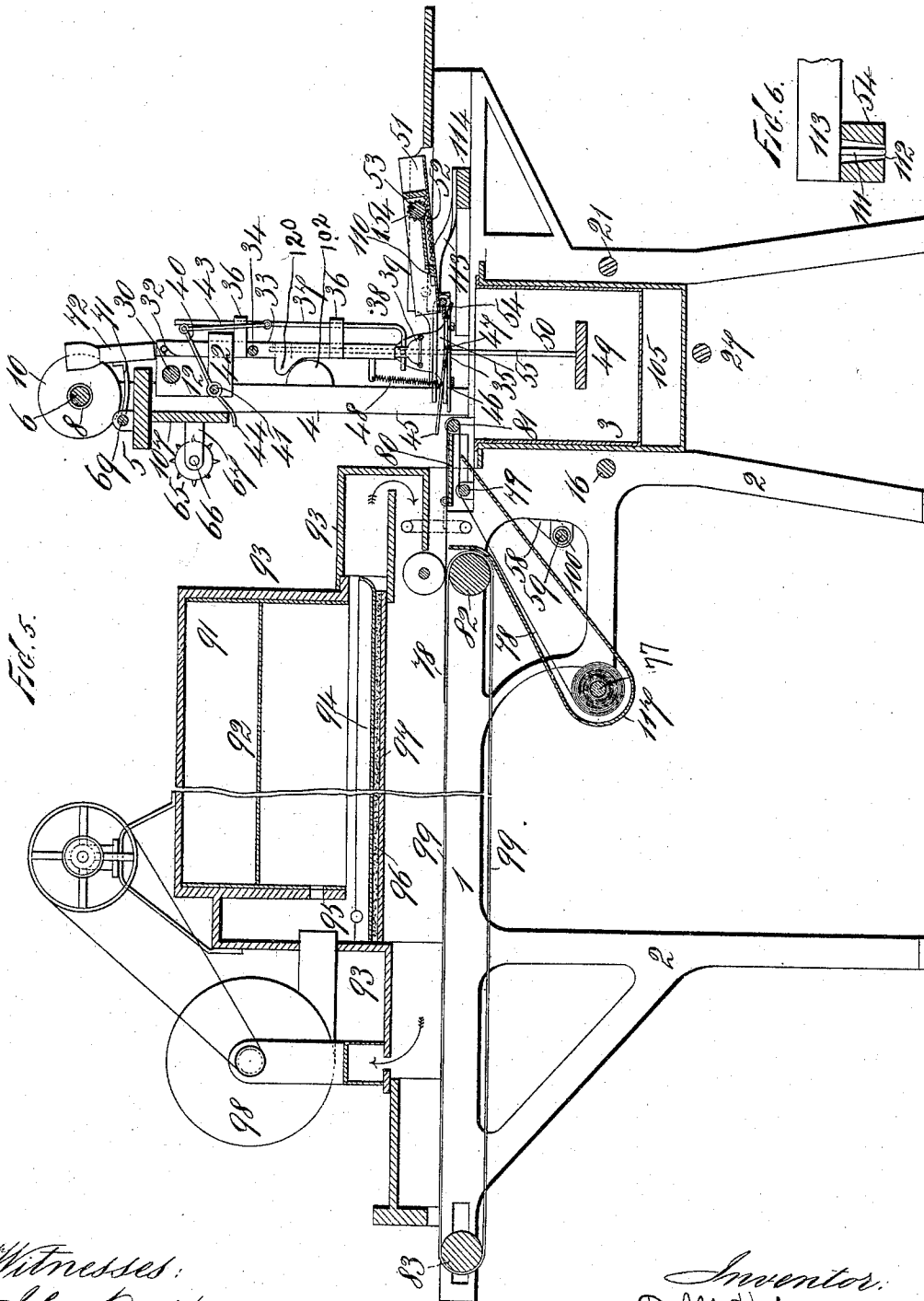
(No Model.)

5 Sheets—Sheet 5

D. M. HOLMES.
MACHINE FOR COATING CONFECTIONERY.

No. 492,205.

Patented Feb. 21, 1893.



Witnesses:
John Buckler,
Wm. Dickson

Inventor:
D. M. Holmes,
A. M. Pierce,
Attorney.

UNITED STATES PATENT OFFICE.

DANIEL M. HOLMES, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO JOHN R. VAN DERVER, OF NEW YORK, N. Y.

MACHINE FOR COATING CONFECTIONERY.

SPECIFICATION forming part of Letters Patent No. 492,205, dated February 21, 1893.

Application filed October 1, 1892. Serial No. 447,479. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. HOLMES, a citizen of the United States, residing at Arlington, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Machines for Coating Confectionery, of which the following is a specification.

My invention relates especially to mechanism employed for coating confectionery with various substances, such as chocolate, and has for its object the provision of a machine which shall cheaply and effectually apply such coating.

To attain the desired end, my invention consists essentially in certain novel and useful combinations or arrangements of parts, and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a like view at the side opposite to Fig. 1. Fig. 3 is a front elevation. Fig. 4 is a plan view. Fig. 5 is a vertical, longitudinal, sectional view at line $x-x$ of Fig. 4. Fig. 6 is an enlarged detail view of the drop mover 54.

Like numerals of reference, wherever they occur, indicate corresponding parts in all the figures.

1 is the main frame of the machine, supported upon legs 2.

3 is a tank for containing coating material, mounted in a water receptacle 105.

4 are vertical standards, extending upward at the sides of the coating tank, and 5 is a cross-piece connecting said standards at top.

6 is a shaft mounted upon the cross-piece 5 in bearings 7.

8 are springs coiled around the shaft 6, having their inner ends secured to a standard 9, the tendency of said springs being to turn the shaft 6 in the direction indicated by the arrow at the top of Fig. 1.

10 are pulleys fixed upon the shaft 6, and 11 are straps secured at their upper ends to pulleys 10, and at their lower ends to slide pieces 12, connected together by a cross-piece 30.

13 are arms projecting from the slides 12,

to which are secured flexible connections 14, leading to segments 15, mounted upon a shaft, 16.

17 is a counterbalance.

18 is a slotted pitman pivoted to one of the segments 15, at 19, and provided with a roller 20.

21 is a shaft, mounted in bearings in the main frame, one extremity of said shaft extending through the slot in the pitman 18, as shown in Fig. 1.

22 is a cam mounted upon shaft 21, and arranged to bear against the roller 20. The shaft 21 is driven by a gear 23, which meshes with a gear 24, mounted upon a stud 25 projecting from the receptacle 105. The gear 24 is secured to a gear 106, which in turn engages with a gear 26, mounted upon a driving shaft 27 which bears a tight pulley 28, and a loose pulley 29.

Upon the cross-piece 30 are secured metal blocks 31, bearing pins 32, which receive side bars 33. These bars are connected together at the top by a cross-bar 34, and at bottom by a drop support 35.

Fixed to the side bars 33 are perforated ears 36, wherein are movably mounted vertical rods 37, curved at 38, and arranged to receive a drop holder 39.

40 are arms pivoted to a cross-rod 41 mounted in bearings 42, secured to the side pieces 33. The extremities of arms 40 are connected by links 43 to the vertically movable rods 37.

44 is an arm secured to the rod 41, and arranged to come in contact with a cross-piece 107 secured to the uprights 4, when the parts are in the position shown in Fig. 5.

45 is the front portion of the dipping mechanism, provided with side arms 46, pivoted at 47 to the drop support, and normally held in an elevated position, as shown in Fig. 5, by springs 48.

49 is a stirring device, held by rods 50, which movably pass through eyes 108 at the side of the drop supporting mechanism, the downward limit of movement being secured by the stop-pins 109.

51 is a feed board, provided at each side with racks, 52.

53 is a hand piece, having gears, 154, at each

extremity, arranged to mesh with the racks 52. Connected to the front of the hand-piece 53 is a drop feeding and centering device, 110.

54 is a drop moving device, having its ends arranged to play in slots 55 in the bottom side bars of the drop holder 35. At each extremity of the drop mover 54 are eyes, 111, where-with pins 112 projecting downward from bars 113 engage when the drop holder is raised to its highest position, but allowing the mover to drop with the dipping mechanism. The bars 113, are connected to a cross-piece 114, which in turn is provided with rods 56 and 57 extending to arms 58 connected to a rock-shaft 59; this shaft 59 is provided with a coiled spring 100, which normally throws the arms 58 and connected parts toward the feeding board.

60 is a slotted pitman, provided with a roller 61. This pitman embraces the shaft 21, where-on is located a cam 62.

Upon the shaft 27, is located a sprocket wheel 63, connected by a chain 64, to a wheel 65 mounted upon a shaft 66, journaled in arms 67 extending from a cross-bar 107.

68 is a ratchet also mounted upon the shaft 66.

69 is a shaft mounted in bearings upon the cross-piece 5; attached to said shaft is a finger 70, and rods 71 bearing hammer heads 72. In order to throw finger 70 out of engagement with the ratchet 68 at pre-determined periods, a rod 73 pivoted upon an upright 4 is arranged to bear against said finger, this arm being carried to a cam 74, mounted upon the shaft 21, a friction wheel in the extremity of rod 73 being arranged to bear upon said cam.

75 is a clutch mounted upon the shaft 21, and provided with a manipulating handle pivoted upon an arm 76, said device being arranged to throw the dipping mechanism into and out of gear at the will of the operator.

77 is a paper reel, mounted in the main frame; 78 is the paper passing therefrom over a roller 79, and around a second roller 81 mounted in a plate 80 hinged to the main frame in order that said plate may be thrown back out of the way when it is desired to remove the coating tank. The paper passes to an endless carrier belt 99, which passes over rollers 82 and 83, mounted in the main frame. The shaft of the roller 83, bears a ratchet 84, and an arm 85, whereon is pivoted a pawl 86.

87 is a rod connected to the arm 85, and passing to a perforated support 88.

115 are stops mounted upon the rod 87.

89 is a rod pivoted to the arm 58, and engaging with an eye-piece 90, arranged to play between the stops, 115.

91 is an ice box having a metal bottom 92, and an outside casing 93. Within casing 93 is a metal bottom 94, arranged to catch any moisture which may drop from the bottom of the ice box, and conduct it to an exit orifice 95.

96 is an asbestos plate located between the metal bottom 94, and a wooden covering. 97.

98 is a circulating fan, driven by means of

suitable connections to shaft 27, and arranged to cause the cold air to circulate through the ice box and the space above the carrier belt 99. The paper reel is covered by a casing 117, and cold air is made to circulate around the paper in order that it shall be cold when the drops are deposited thereon, thus insuring a proper covering of coating material upon the bottom of the drops.

In operating my confectionery coating machine, the material to be applied to drops, or the equivalent, is placed in the tank 3, and kept at the requisite temperature in any preferred manner. The drops to be coated are placed in the spaces in the feeding and centering device 110 and pushed under the drop holder 39 by means of the hand-piece 53. As the mechanism commences to move, and the dipping device to descend, through the medium of the straps 14, segments 15, and cam 22, the releasing of the arm 44 from contact with piece 107 permits the drop holder 39 to descend upon the drops, holding them in place, and they are then carried down into the coating material. The stirrer 49 descends into the coating material, thoroughly mixing the same. When the cam 22 has made a portion of a revolution, it ceases to hold the segments 15, and they return to their initial position, through the action of the weight 17, and the springs 8, drawing upward upon the dipping mechanism. When said mechanism reaches its first position, the holder 39 raises from the drops, and as the cam 62 now comes into operation, the pusher, or drop moving device 54 is carried over the drop support, past the center thereof. From the peculiar shape of the cam 62, it now returns to its first position, and after an interval of time again moves entirely over the drop support, and as it strikes the arms 46 at the sides of the extension 45 of the drop support, said extension is brought downward so as nearly to touch the paper 78, and the drops are pushed onto said paper which at that moment moves forward at the same rate of speed as the drops, making a clean deposit and leaving the requisite space for the reception of the next row of drops. The return of the drop mover 54 is rapid, and the extension 45 raises quickly to the original position, instantly and effectually severing any adhering coating material. As the coating mechanism descends, the projections 120 upon the side bars 33 come in contact with segments 102 upon the uprights 4, thus causing said dipping mechanism to swing toward the feeding table, both in its descent and ascent, clearing the paper as the front portion 45 passes thereby. As the dipping mechanism reaches its highest point, the finger 70 is no longer held out of engagement with the ratchet 68, but, through the medium of the rod 73 and its connections is released permitting the ratchet 68 to strike it, and the hammers are caused to rapidly tap the upper portion of the connections to the drop holder, thus causing the jarring off of

the surplus coating, and this jarring continues until the drops are nearly deposited upon the paper. As the drops pass into the cooling chamber they are subjected to the action of the cold, circulating, dry air, and upon passing therefrom are ready for packing.

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

1. In a machine of the character herein specified, the combination with the drop dipping mechanism, of a jarring device for removing surplus coating material from the drops, substantially as shown and described.

2. A machine for coating confectionery, in which is comprised a coating tank, a vertically movable drop supporting and dipping device; a drop feeding and delivering device, and means for automatically reciprocating the dipping and the feeding and delivering devices, substantially as shown and described.

3. In a machine of the character herein specified, the combination with the drop supporting, holding, and feeding mechanism, of a vertically movable support over which the coated goods pass to the paper whereon they are deposited, substantially as shown and described.

4. In a machine of the character herein

specified, the combination with the dipping mechanism and coating tank, of a flat, vertically movable stirring device mounted beneath the dipping mechanism, substantially as shown and described.

5. In a machine of the character herein specified, the combination with the dipping mechanism, of a drop moving device, and means whereby said device is caused to move alternately partially, and then entirely over the drop support, substantially as shown and described.

6. In a machine of the character herein specified, the combination with the main frame, of a paper reel supported therein within a chamber; connections between said chamber and an ice box; an ice box located above the main frame; a carrying belt located beneath said ice box; means for moving said belt, and a circulating fan adapted and arranged to cause a continuous circulation through the ice box and over the carrying belt, the whole combined and arranged, substantially as shown and described.

DANIEL M. HOLMES.

Witnesses:

A. M. PIERCE,
ISABEL CHESTER.