

No. 681,929.

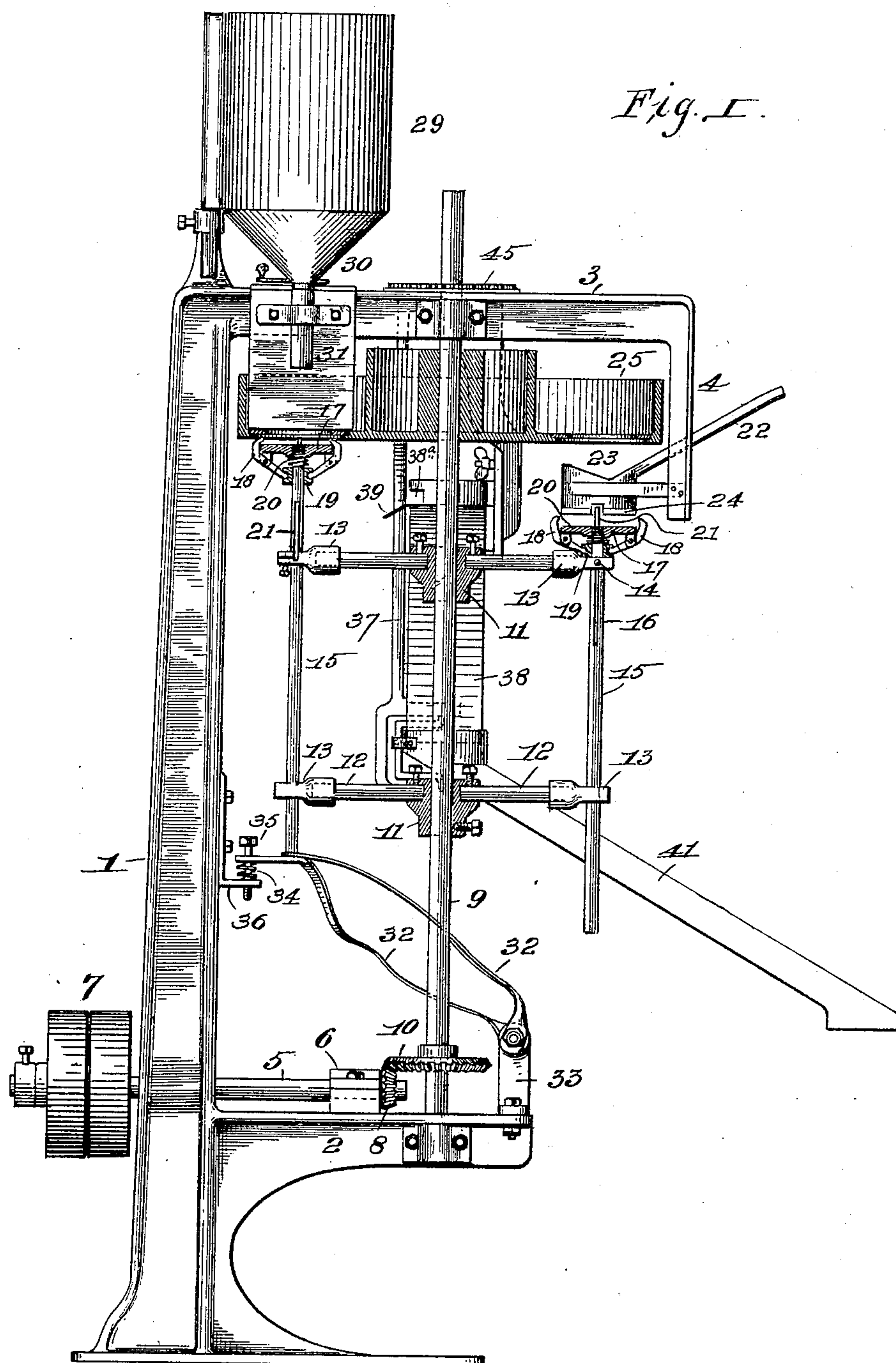
Patented Sept. 3, 1901.

J. ROSBOROUGH.
CAKE ICING MACHINE.

(Application filed Feb. 4, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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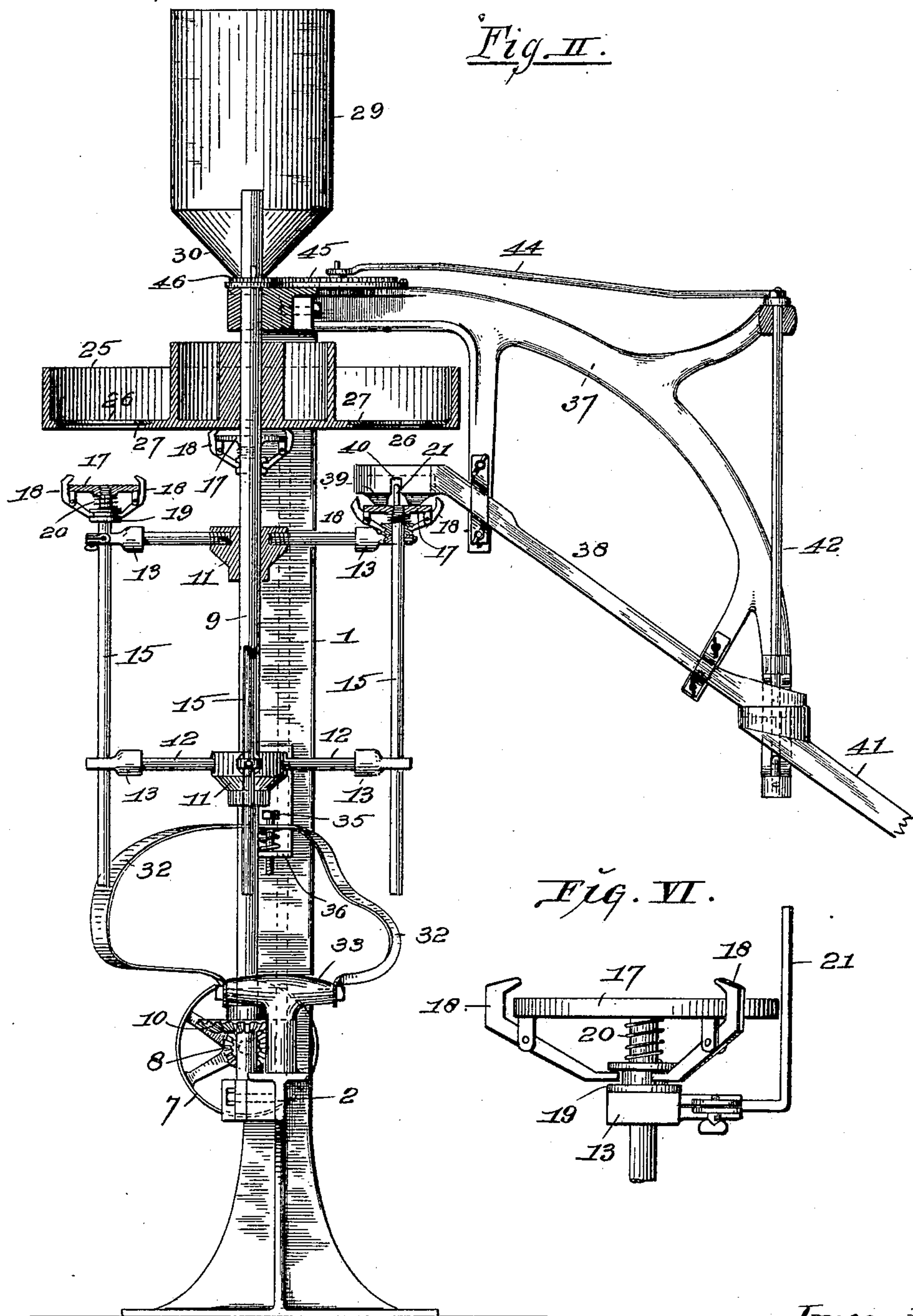
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3 Sheets—Sheet 2.



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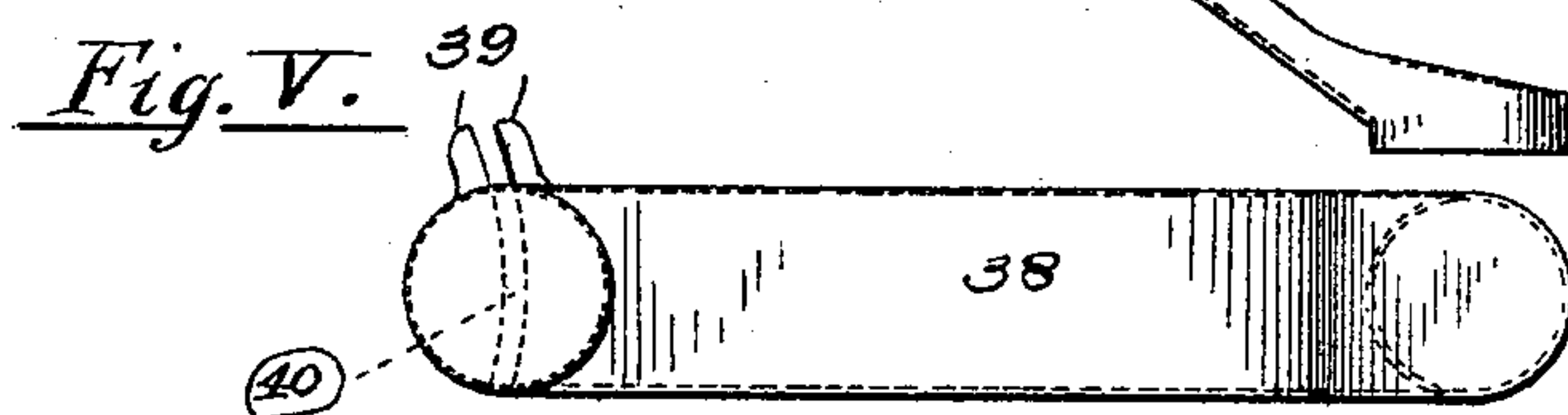
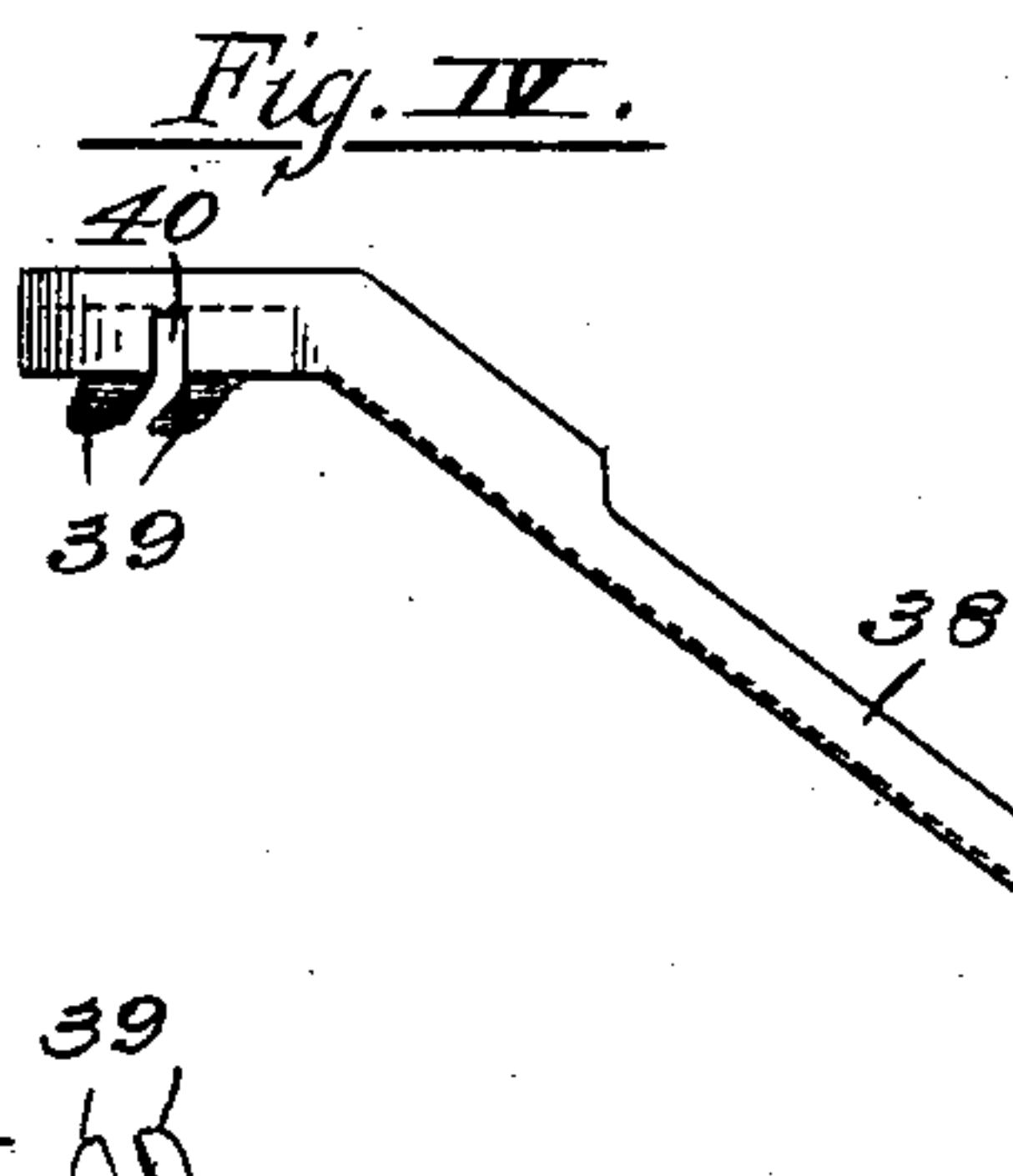
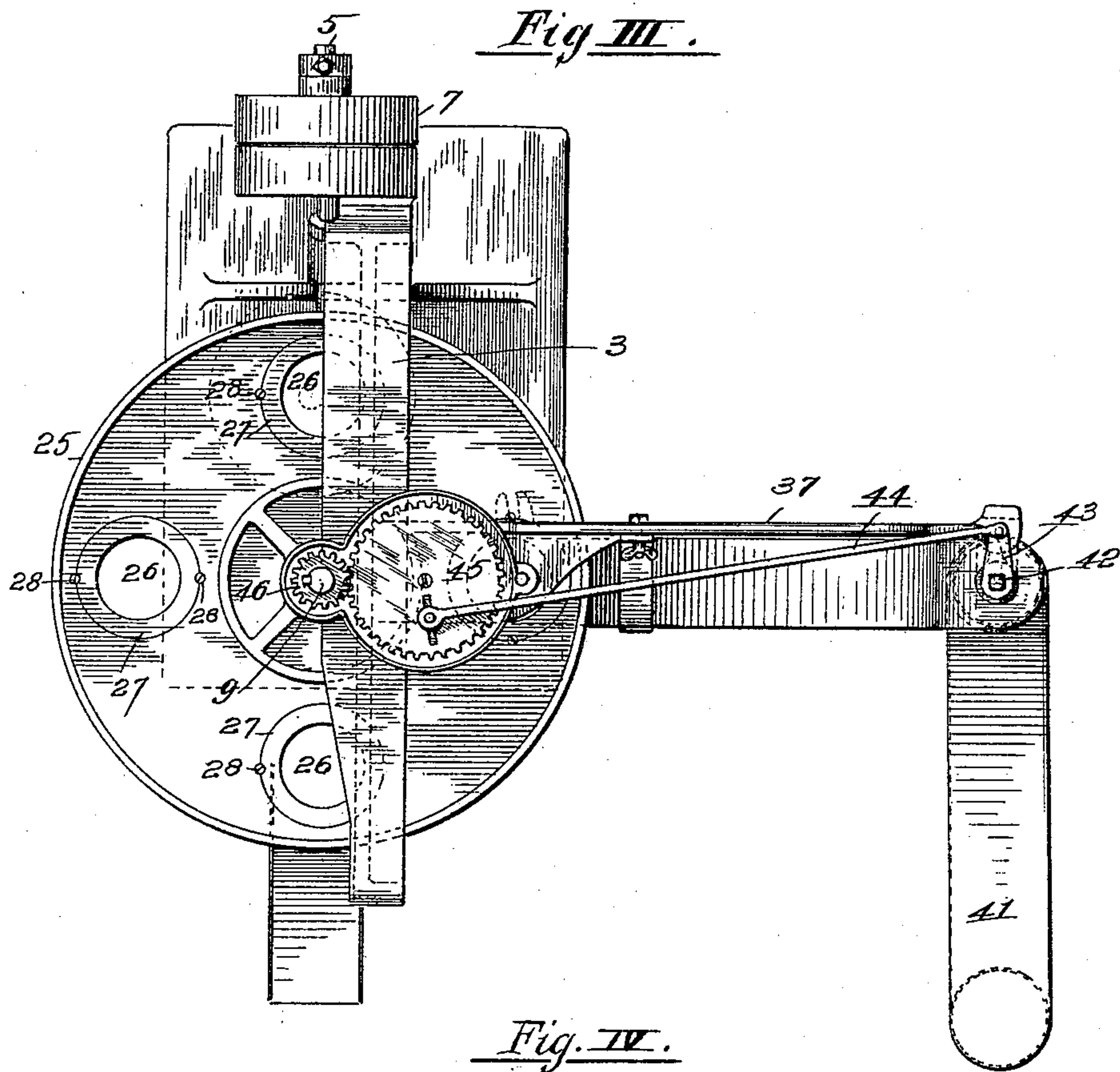
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JOHN ROSBOROUGH, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
LOUIS A. MANEWAL, OF SAME PLACE.

CAKE-ICING MACHINE.

SPECIFICATION forming part of Letters Patent No. 681,929, dated September 3, 1901.

Application filed February 4, 1901. Serial No. 45,914. (No model.)

To all whom it may concern:

Be it known that I, JOHN ROSBOROUGH, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Cake-Icing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for applying icing to cakes, the machine being so constructed that the cakes are automatically dropped into clamping and carrying means and conveyed to a position beneath the icing-containing receptacle, where the icing is deposited on the cakes and the surplus of icing is removed, after which the cakes are automatically delivered from the machine.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a view partly in side elevation and partly in vertical section. Fig. II is a view partly in side elevation and partly in vertical section looking at the machine from a position at right angles to that in Fig. I. Fig. III is a top or plan view. Fig. IV is a side or edge view of the upper delivery-chute. Fig. V is a top view of the upper delivery-chute. Fig. VI is a detail view of one of the cake-carriers.

1 designates the main frame of the machine, having a lower arm 2 and an upper arm 3, the latter of which is provided with a downwardly-extending leg 4.

5 designates a drive-shaft mounted in a suitable bearing in the main frame 1 and in a box 6 on the lower arm 2. The drive-shaft 5 is equipped with suitable pulleys 7 and carries upon its inner end a beveled pinion 8.

9 designates a vertical shaft mounted in suitable bearings in the lower and upper arms 2 and 3 and equipped with a beveled pinion 10, that meshes with the pinion 8 for the purpose of driving said vertical shaft. Fitted upon the vertical shaft 9 are collars 11, each of which has attached to it a series of horizontal rods 12, that carry guides 13, containing set-screws 14.

15 designates slide-rods movably mounted

in the guides 13 and provided with grooves 16, (see Fig. I,) that are adapted to receive the set-screws 14 to prevent the rotation of the slide-rods, while permitting longitudinal movement thereof.

17 designates cake-receiving disks removably affixed to the upper ends of the slide-rods 15 and having pivoted thereto a set of jaws 18. The points of the jaws 18 project above the disks 17 to grip the cakes deposited thereon, while their lower ends are seated in a grooved collar 19. Between the disks and collars are expansion spiral springs 20, the tendency of which is to force the collars downwardly away from the disks when the collars are relieved from pressure, thereby causing the points of the jaws to be moved inwardly and grip the cakes that are delivered onto the disks 17, as will hereinafter appear.

21 designates push-fingers carried by the upper guides 13 and extending vertically beside the disks 17.

The cakes to be iced are delivered to the disks 17 by depositing them in a chute 22, that terminates in a cup 23, suitably supported. The cup 23 is provided in its wall with a slot 24, through which the cakes may pass to fall onto the disks 17, the cakes being ejected through said slot by the push-fingers 21, that pass through the bottoms of the cups, as seen in Fig. I. At the time that the cakes are delivered from the cups 23 onto the disks 17 the slide-rods 15 are in their lowermost positions, (see Fig. I,) and the weight of said rods counteracts the expansion of the springs 20, so that the collars 19 are carried upwardly on the slide-rods toward the disks 17, thereby causing the jaws 18 to be opened to receive the cakes.

25 designates a turn-table mounted on the vertical shaft 9 near its upper end and above the slide-rods 15 and parts carried thereby, the said table being arranged to rotate with said rods and parts. The turn-table 25 is provided with an annular rim and contains a series of apertures 26, the size of which is diminished by removable reducing-rings 27, suitably applied to the turn-table and held by set-screws 28 or other means of fastening.

29 designates a receptacle for the icing to be applied to the cakes, said receptacle be-

ing suitably mounted upon the frame of the machine and having a funnel-shaped valved bottom 30.

31 is a scraper stationarily positioned beneath the receptacle 29 and adapted to bear in contact with the upper surface of the turn-table 25.

32 designates an inclined track pivoted to a post 33, mounted on the lower frame-arm 2 and adjustably and yieldingly supported by a spring 34, surrounding an adjustment-bolt 35, that is seated in a bracket 36, mounted on the main frame 1.

37 designates an arm extending outwardly and downwardly from the main frame 1. (See Fig. II.)

38 is a delivery-chute removably mounted upon branches of the arm 37 and into which the cakes pass from the disks 17 after they have been iced. The upper end of the chute 38 is provided in its wall with a mouth 38^a, through which the cakes pass into the chute, (see Fig. I and dotted lines, Figs. II and IV,) and projecting downwardly from the chute at the location of said mouth is a pair of tongues 39, that are adapted to pass under the cakes on the disks 17 to receive them therefrom. As the tongues 39 pass under the cakes the push-fingers 21 press against the cakes and conduct them up the tongues into the chute 38, while the push-fingers pass on through a slot 40 in the upper end of the chute. (See Figs. II and IV.)

41 designates a vibrating chute having its upper end arranged beneath the lower end of the delivery-chute 38 and arranged to deposit the cakes in rows on a table or tray placed beneath the lower end of the vibrating chute to receive them, thereby obviating the necessity of the cakes being handled manually while the icing is moist thereon. The vibrating chute 41 is supported and rocked by a crank-shaft 42, (see Fig. II,) to which the upper end of the chute is connected, as seen in Fig. I. The upper end of the crank-shaft 42 is equipped with a crank-arm 43, that receives one end of a pitman 44. The opposite end of the pitman 44 is adjustably connected to a gear-wheel 45, mounted on the inner end of the arm 37 and arranged to mesh with a pinion 46 on the vertical shaft 9, and by which the gear-wheel 45 is rotated to impart a rocking motion to the pitman 44 to rock the crank-shaft 42 and vibrate the chute 41.

In the practical use of the machine the cakes are introduced into the chute 22 and cup 23 and delivered therefrom onto the receiving-disks 17 in the manner hereinbefore described. As stated, the slide-rods 15 are at the time of the delivery of the cakes onto the disks 17 in their lowermost positions, as seen at the right hand of Fig. I. As the vertical shaft 9 revolves and carries the slide-rods 15 and disks 17 therewith the lower ends of the slide-rods are brought onto the inclined track 32, and riding up said track are raised to the position seen in Fig. I at the left-hand

side, during which the jaws 18 are caused to grip the cakes on the disks in the manner stated. When the disks are raised to their greatest elevation, they occupy positions immediately beneath the turn-table 25, at the location of the apertures 26 therein. At the same time the scraper 31 carries a quantity of icing from the portions of the turn-table between the apertures into the apertures and onto the cakes that are resting on the disks, with the result that the cakes receive the deposit of the icing. The turn-table continues to revolve, and the scraper 31 removes the surplus icing from the cakes and carries it onto the succeeding unapertured portion of the turn-table. The continued rotation of the slide-rods and disks causes the slide-rods to begin to descend on the inclined track 32, and when the collars 19 come into contact with the upper guides 13 the collars are raised, thereby opening the jaws 18 and freeing the cakes. At this time the disks 17 are brought into juxtaposition with the tongues 39 of the delivery-chute 38, and said tongues pass under the cakes in the manner stated and the push-fingers 21 press against the cakes and carry them up into the mouth 38^a of said chute for delivery through the chutes 38 and 41.

By the employment of the reducing-rings 27, removably applied to the turn-table 25 at the apertures 26, I provide for the adaptability of the machine to ice cakes of varying sizes, inasmuch as where the cakes are of small size reducing-rings having smaller apertures therein may be utilized and where the cakes are of larger size reducing-rings containing larger apertures may be utilized. In the same connection disks 17 of varying size may be used, according to the size of the cakes being iced.

By employing the adjustable spring-support for the inclined track 32 I provide for the vertical adjustment of said track, so that it may be raised or lowered to cause the slide-rods to be elevated a greater or less distance with relation to the turn-table 25, according to the thickness of the cakes being iced, so that the cake will be carried into the aperture 26 to the proper extent to avoid escape of the icing as it is deposited onto the cake.

I claim as my invention—

1. In a machine of the class described, the combination of an apertured rotatable turn-table, means located beneath said turn-table for receiving and carrying the cakes to be iced, means for automatically depositing the cakes on said carrying means, and means for causing said cake-carrying means to be elevated to the apertures in said turn-table, substantially as described.

2. In a machine of the class described, the combination of an apertured rotatable turn-table, means for receiving and carrying the cakes to be iced, means for automatically depositing the cakes on said carrying means, means for elevating said cake-carrying means

to the apertures in said turn-table, and means for depositing and spreading the icing on said cakes, substantially as described.

3. In a machine of the class described, the
5 combination of an apertured rotatable turn-table, means for receiving and carrying the cakes to be iced, means for elevating said cake-carrying means to the apertures in said turn-table, a delivery-chute, and means for
10 conducting the cakes from said carrying means into said delivery-chute, substantially as described.

4. In a machine of the class described, the
15 combination of an apertured rotatable turn-table, means for receiving and carrying the cakes to be iced, means for elevating said cake-carrying means to the apertures in said turn-table, a delivery-chute, means for con-
20 ducting the cakes from said carrying means into said chute, and a vibrating chute having communication with said delivery-chute, substantially as described.

5. In a machine of the class described, the
25 combination of an apertured rotatable turn-table, means for receiving and carrying the cakes to be iced, an inclined track through which said cake-carrying means is elevated to said turn-table, and means for depositing
30 the icing from said turn-table onto said cakes, substantially as described.

6. In a machine of the class described, the
combination of an apertured rotatable turn-table, means for receiving and carrying the
35 cakes to be iced, a spring-supported track by which said cake-carrying means is elevated, and means for depositing the icing from said turn-table onto the cakes, substantially as described.

7. In a machine of the class described, the
40 combination of an apertured rotatable turn-table, means for receiving and carrying the cakes to be iced, a slotted chute from which the cakes are discharged onto said cake-carrying means, means for discharging the cakes
45 from said chute onto said cake-receiving

means, means for elevating said cake-carrying means to said turn-table and means for depositing the icing from said turn-table onto the cakes, substantially as described.

8. In a machine of the class described, the
50 combination of an apertured rotatable turn-table, cake-carrying disks, slide-rods by which said disks are carried and means for elevating said disks to said turn-table, substantially as described. 55

9. In a machine of the class described, the
combination of an apertured rotatable turn-table, cake-carrying disks, slide-rods by which
60 said disks are carried, spring-controlled jaws carried by said disks, and means for elevating said slide-rods and disks to raise said disks to said turn-table, substantially as described.

10. In a machine of the class described, the
combination of an apertured rotatable turn-table, cake-carrying means, means for elevat-
65 ing said cake-carrying means to said turn-table, and a scraper arranged to deposit the icing on the cakes through the apertures in said turn-table, substantially as described.

11. In a machine of the class described, the
70 combination of cake-carrying means, an apertured rotatable turn-table, means for elevating said cake-carrying means to said turn-table, and reducing-rings arranged in the apertures of said turn-table, substantially as de-
75 scribed.

12. In a machine of the class described, the
combination of means for carrying the cakes to be iced, means for applying icing thereto,
80 a delivery-chute, tongues projecting from said chute and adapted to receive the cakes from said carrying means, and a push-finger arranged to conduct the cakes on said tongues into said delivery-chute, substantially as de-
scribed.

JNO. ROSBOROUGH.

In presence of—

E. S. KNIGHT,
M. P. SMITH.