N. P. VLAHOYANES.

MIXING MACHINE.

APPLICATION FILED APR. 11, 1910.

973,394.

Patented Oct. 18, 1910.

2 SHEETS—SHEET 1.

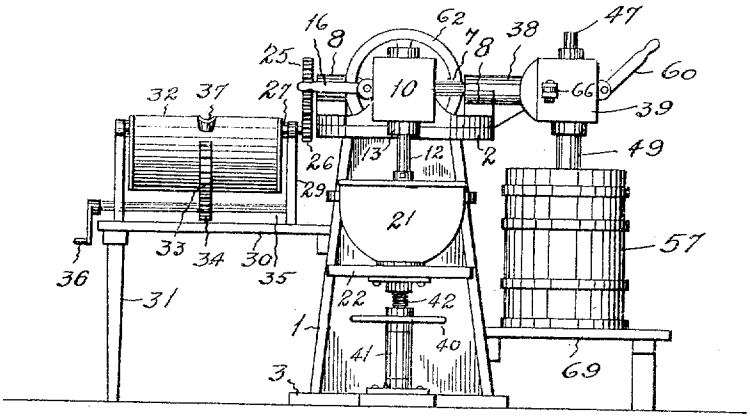

Fig. 1.

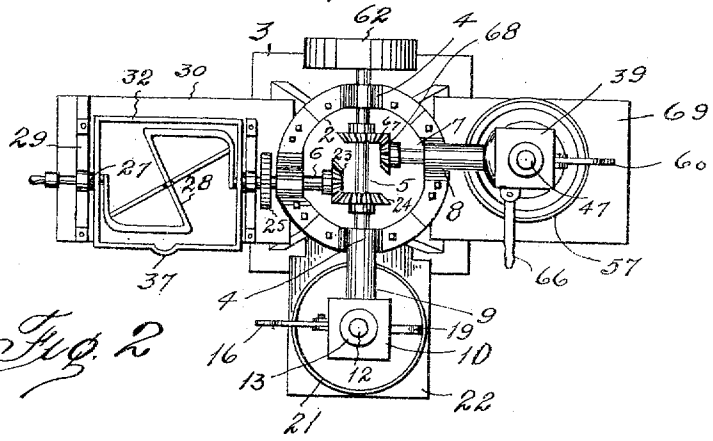

Fig. 2.

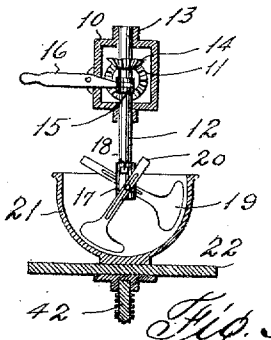

Fig. 3.

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2 SHEETS—SHEET 2.

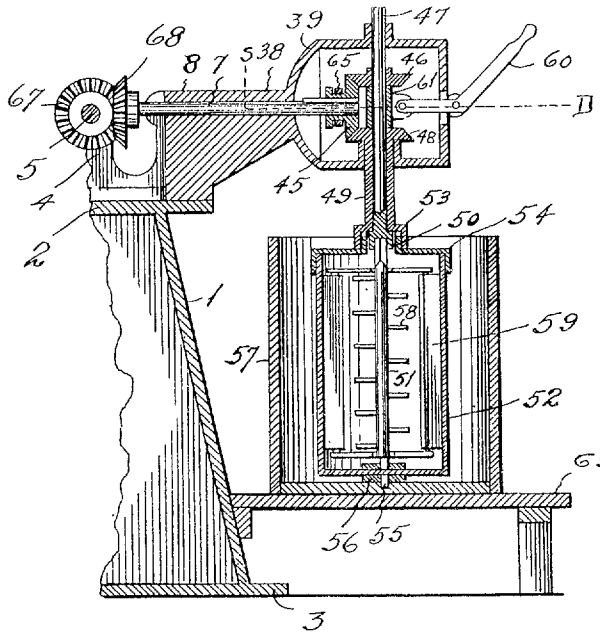

Fig. 4.

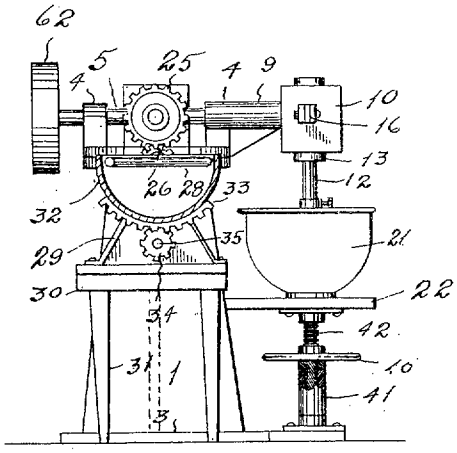

Fig. 5.

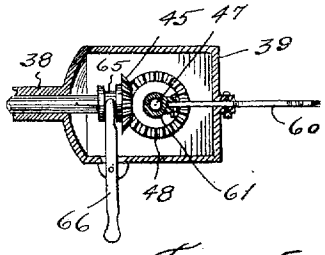

Fig. 6.

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UNITED STATES PATENT OFFICE.

NICKOLAS P. VLAHOYANES, OF FORT WORTH, TEXAS.

MIXING-MACHINE.

973,394. Specification of Letters Patent. **Patented Oct. 18, 1910.**

Application filed April 11, 1910. Serial No. 554,736.

To all whom it may concern:

Be it known that I, NICKOLAS P. VLAHOYANES, citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Mixing-Machines, of which the following is a specification.

This invention relates to confectioners' machines and particularly a mixing machine.

The object of the invention is to provide a machine having a common driving means, horizontal and vertical mixing connections and supports for the various parts.

A further object resides in dumping and pouring means for one of the mixers and other particular machanism.

Finally the object of the invention is to provide means of the character described that will be strong, durable, efficient, and easy of operation, simple and comparatively inexpensive to construct, and also in which the several parts will not be likely to get out of working order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in this specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation of the machine, Fig. 2 is a plan view, Fig. 3 is a detail in section of one of the vertical mixers, Fig. 4 is a vertical section of a portion of the machine, Fig. 5 is an end elevation with the mixing vat in section, and Fig. 6 is a horizontal cross sectional view taken on the line S—D of Fig. 4.

In the drawings the numeral 1, designates a central stand or pedestal having a ring plate 2 secured on its top and resting on an extended base 3. On the ring plate a pair of opposed bearing boxes 4 are secured and receive a horizontal drive shaft 5. At right angles to the shaft 5 counter shafts 6 and 7 are mounted in bearing boxes 8 disposed on opposite sides of the ring plate but unalined. It will be noted that the boxes 4 and 8 are shaped to conform to the ring plate. By this arrangement not only a saving in metal is had, but the open portion of the ring plate permits gears to be mounted on the shafts between the boxes.

The forward box 4 has a forwardly extending sleeve 9 terminating in a housing 10. The shaft 5 extends through the sleeve to the housing and has fixed on its ends therein a vertical bevel gear 11. A mixer shaft 12 extends vertically through the housing in which it may be moved vertically through bearings 13. A bevel gear 14 meshing with the gear 11 is fixed on the shaft 12. For raising the shaft and also for throwing the gears out of mesh, a grooved collar 15 is secured on the mixer shaft just below the gear 14, which collar receives the yoke end of a horizontal lever 16 pivoted at the side of the housing and operating through a slot therein. By depressing the outer end of the lever the gear 14 and shaft 12 are raised.

The shaft 12 depends from the housing and has a sleeve 17 on its lower end held by a set screw 18. On opposite sides of the sleeve mixing blades are fastened. These blades each have a broad rounded paddle 19 and a slotted stem 20 by which they may be adjusted radially and axially. A mixing vessel 21 is supported on a shelf 22. The mixing blades are rotated in this vessel by the shaft 12 and are raised therewith by the lever 16. When it is desired to remove the vessel the shelf 22 may be lowered by turning a hand wheel 40 which rests on a supporting sleeve 41 and engages with threads of a screw 42 on the shelf.

The shaft 6 before referred to has a bevel gear 23 on its inner end which meshes with a like gear 24 fixed on the shaft 5. On the outer end of the shaft 6, a spur gear 25 is fastened and meshes with a pinion 26 thereunder. This pinion is fixed on the inner trunnion 27 of a horizontal beater 28 having its trunnion 27 mounted to revolve in the upper ends of standards 29. The standards are secured on a platform 30 extending from the stand 1 and supported at its outer end by legs 31. Between the standards a mixing vat 32 is horizontally hung on the beater trunnions 27 and is free to be swung at any time. This vat has particularly high sides which prevent splashing and a rounded bottom in cross section. For swinging the vat and dumping its contents, a transverse gear segment 33 is provided on the bottom of the vat and meshes with a pinion 34 fixed on a shaft 35 supported by the standards 29. The shaft 35 has a handle 36 on its outer end by which it may be turned and the vat swung or dumped. To

cause the material to "pour" from the vat, a mouth and lip construction 37 is provided at one side and upper edge.

The bearing box 8 through which the shaft 7 extends connects with a sleeve 38 which terminates in a housing 39. Within the housing a miter gear 45 is keyed on the shaft 7 and meshes with a pinion 46 mounted on a vertical shaft 47 extending through the housing. A pinion 48 fixed on a sleeve 49 through which the shaft 47 passes meshes with the underside of the miter gear 45 so that it may be revolved in the opposite direction to that in which the shaft 47 is revolved.

The lower end of shaft 47 carries a collar 50 which is arranged to engage over the squared end of a spindle 51 pivoted in the bottom of a receptacle 52 while the lower end of the sleeve 49 carries a similar collar which engages with a square sleeve 53 on a lid 54 which covers the receptacle 52 and is fixed to cause the receptacle to revolve on a pivot 55 which turns in a bearing 56 secured in the bottom of a receptacle 57. The spindle 51 carries mixing blades 58 arranged in staggered relation and scraper 59 which keeps the sides of the receptacle clean.

The miter gear 45 may be slipped back on the shaft 7 so as not to mesh with the pinions 46 and 48 and the receptacle and spindle will be brought to rest. After the gear 45 has been slipped back the shaft 47 and sleeve 49 may be raised enough to disconnect with the receptacle and the spindle by pressing down on a lever 60 which engages with a loose collar 61 on the shaft 47. A pulley 62 mounted on the shaft 5 transmits power to the entire machine.

In mixing certain confections it is necessary to first mix several of the ingredients thoroughly giving them a slow but positive rotary movement. This may be accomplished by the paddles 19 in the vessel 21 but as other ingredients are added the matter would form into a body too heavy to be "worked" by paddles; it is then transferred into mixing vat 32 where the mixing is carried on by beater 28. The material may then be transferred to the receptacle 52 and revolved therein until it is cool enough to dip or to be otherwise used.

It is to be observed that the receptacle 57 is supported on a platform 69 extending from the central stand. Motion is imparted to the shaft 7 by a miter gear 68 attached thereto and meshing with a similar gear fixed on the shaft 5. For sliding the gear 45 out of mesh with the pinions 46 and 48, the gear is provided with a grooved hub 65 engaged by the yoke end of a lever 66 pivoted in the side of the housing 39 and outward therefrom.

What I claim is:

1. In a confectionery machine, the combination with a central stand, of a horizontal shaft supported by the stand, of a housing supported from the stand, a miter gear engaging on the shaft within the housing, a vertical shaft carrying a miter gear engaging with the miter gear carried by the horizontal shaft having a sleeve adapted to support mixing paddles, means for disengaging the gears, a shelf adapted to hold a vessel in the path of the paddles, means for raising and lowering the shelf, a spur shaft driven by the first named shaft extending at right angles thereto and carrying a miter gear at its end, a housing supported from the stand arranged over the latter, a vertical shaft mounted in the housing adapted to be driven by the gear on the spur shaft, a sleeve arranged to revolve around said shaft, means for revolving the sleeve in the direction to which the shaft is rotated, means for connecting the shaft and the sleeve to a vertical mixer, means for stopping the rotation of the shaft and sleeve, means for raising the same, a horizontal vat supported from the stand, a beater arranged in the vat adapted to be driven from the horizontal shaft, and means for tilting the vat to empty the contents.

2. In a confectionery machine, the combination with a central stand, of a horizontal shaft supported by the stand, a plurality of counter shafts extending at right angles to the horizontal shaft supported by sleeves carried on the central stand, a horizontal vat carried by the central stand, beaters arranged to operate in the vat driven by one of the counter shafts, a vertical shaft driven by the horizontal shaft adapted to carry adjustable paddles, a shelf arranged below the vertical shaft adapted to hold a vessel, means for raising the shelf, and means for severing the connection between the vertical shaft and the horizontal shaft.

3. In a confectionery machine, the combination with a central stand, of a horzontal shaft supported by the stand, a plurality of counter shafts extending at right angles to the horizontal shaft supported by sleeves carried on the central stand, a horizontal semi-cylindrical vat supported by the central stand, beaters arranged to operate in the vat driven by one of the counter shafts, a rack fixed on the bottom of the vat arranged to engage with a pinion and to rock the vat to empty its contents, a vertical shaft supported from the stand arranged to be driven by the other counter shaft to operate a spindle in a vertical mixer, a sleeve surrounding the vertical shaft driven from the counter shaft and arranged to transmit a reversed rotary motion to the vertical mixer in which the spindle turns, means for allowing the last named counter shaft to run

free, and means for raising the vertical shaft and the sleeve which surrounds it to disengage them from the vertical mixer.

4. In a confectionery machine, the combination with a central stand, of a horizontal shaft supported by the stand, a plurality of counter shafts extending at right angles to the horizontal shaft supported by sleeves carried on the central stand, a horizontal semi-cylindrical vat driven by one of the counter shafts, a rack fixed on the bottom of the vat arranged to engage with a pinion and to rock the vat to empty its contents, a vertical shaft supported from the stand arranged to be driven by the other counter shaft to operate a spindle in a vertical mixer, a sleeve surrounding the vertical shaft driven from the counter shaft and arranged to transmit a reversed rotary motion to the vertical mixer in which the spindle turns, means for allowing the last named counter shaft to run free, means for raising the vertical shaft and the sleeve which surrounds it to disengage them from the vertical mixer, a vertical shaft driven by the horizontal shaft adapted to carry adjustable paddles, a shelf arranged below the vertical shaft adapted to hold a vessel, means for raising the shelf, and means for severing the connection between the vertical shaft and the horizontal shaft.

5. In a confectionery machine, the combination with a central stand, of a horizontal shaft supported by the stand, a plurality of counter shafts supported by sleeves carried on the central stand, a horizontal vat supported from the central stand, beaters arranged to operate in the vat driven by one of the counter shafts, a vertical shaft driven from the horizontal shaft having its lower end arranged to receive adjustable paddles, a shelf arranged below the vertical shaft adapted to hold a vessel, a vertical mixer supported from the central stand, means for transmitting power from a counter shaft to a vertical spindle supported within the vertical mixer, and means for turning a receptacle about the spindle supported within the vertical mixer.

6. In a confectionery machine, the combination with a central stand, of a horizontal shaft supported by the stand, a plurality of counter shafts supported by sleeves carried on the central stand, a horizontal vat supported from the central stand, beaters arranged to operate in the vat driven by one of the counter shafts, a vertical shaft driven from the horizontal shaft having its lower end arranged to receive adjustable paddles, a shelf arranged below the vertical shaft adapted to hold a vessel, a receptacle supported from the central stand, means for rotating the receptacle having connection with the counter shaft, mixing blades arranged within the receptacle, and means for rotating said mixing blades in the opposite direction to the rotation of the receptacle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NICKOLAS P. VLAHOYANES.

Witnesses:

PETER GIRGULIS,

CLAUDE STEVENSON.