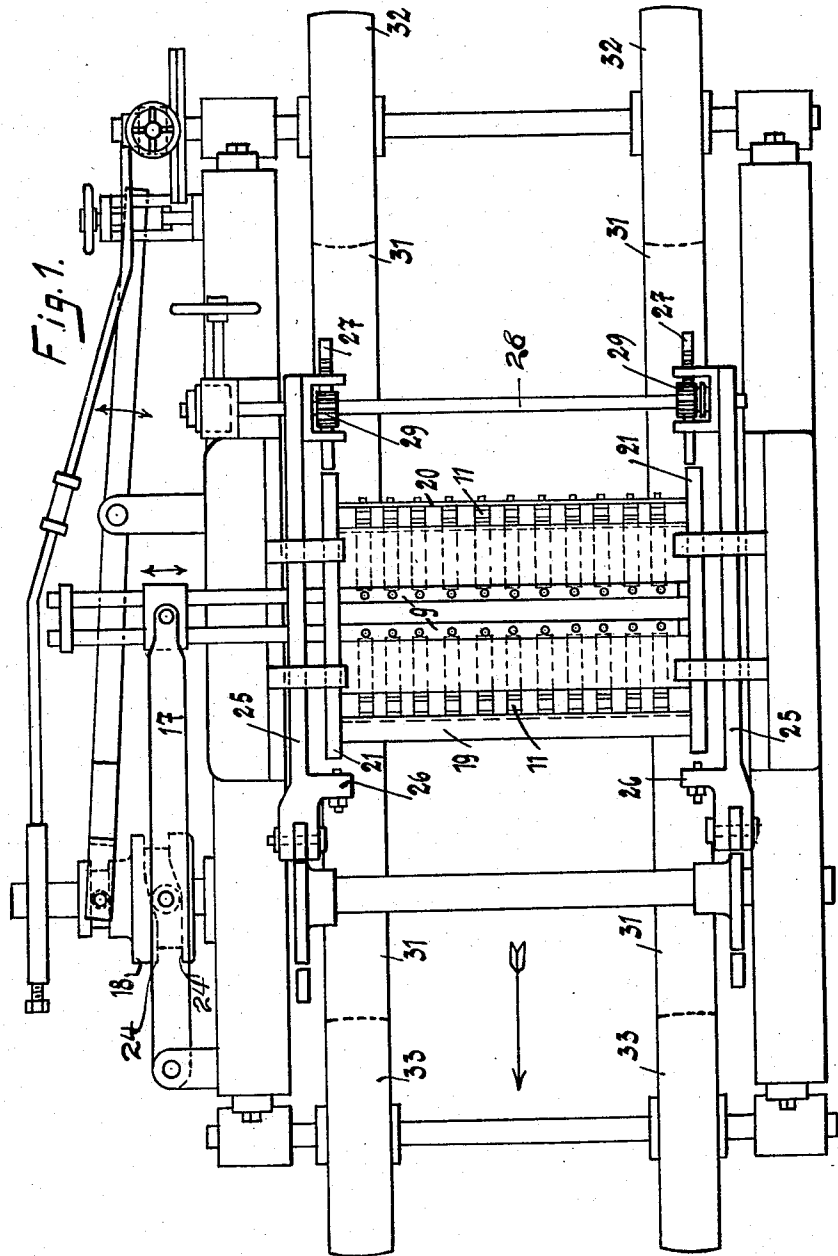


M. OPPENHEIM.
MACHINE FOR CASTING CONFECTIONERY.
APPLICATION FILED JUNE 7, 1915.

Patented Nov. 30, 1915.

2 SHEETS—SHEET 1.

1,162,391.



Witnesses:
Jos. Bischoff
E. W. Mather

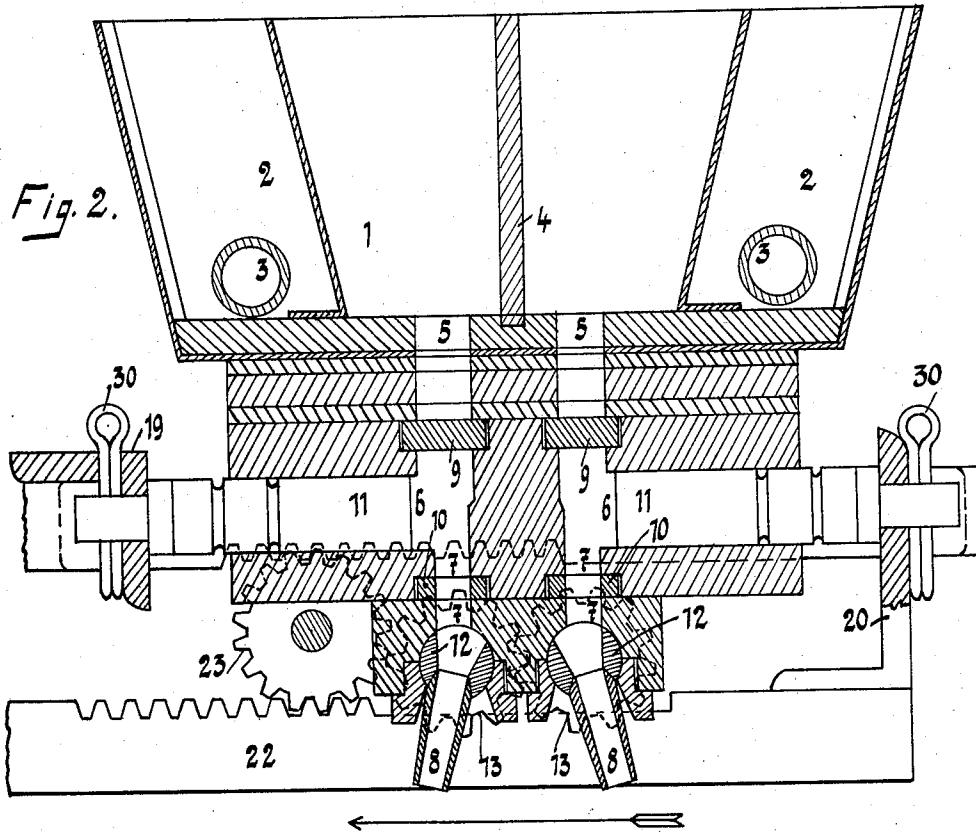
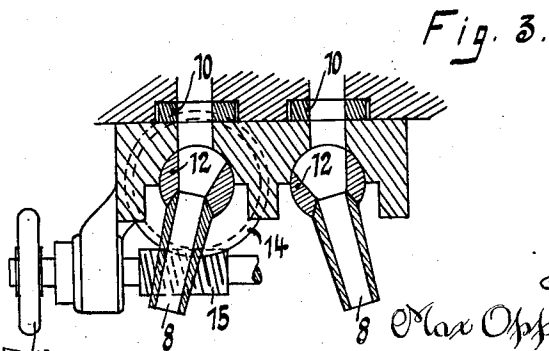
Inventor:
Max Oppenheim
by Carl F. Grefel
his Attorney

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2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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MACHINE FOR CASTING CONFECTIONERY.

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Specification of Letters Patent.

Patented Nov. 30, 1915.

Application filed June 7, 1915. Serial No. 32,538.

To all whom it may concern:

Be it known that I, MAX OPPENHEIM, a subject of the Austro-Hungarian Emperor, and a resident of Brünn, Austria-Hungary, have invented certain new and useful Improvements in Machines for Casting Confectionery, of which the following is a statement.

The existing casting machines for confectionery (creams, fondants, jellies) are provided with a series of outlet tubes and ejector plungers at given distances from each other arranged transversely to the direction of the intermittent travel of the molds. Contrary thereto the present invention consists in that the outlet tubes and ejector plungers are disposed in two rows, and that the said tubes are adjustable by means of tubular joints, so that the distance between the orifices of the two rows of tubes may be varied. In order to understand the advantages of this novel arrangement, it is necessary to remember that the weight of the goods made on such machines varies within very wide limits. The machine is, generally, so arranged, that at each stroke of the piston pump driving the material either 1 or 10 grams may be discharged. When pieces of a greater weight, say 20 grams, are to be cast, the mold may be either placed crosswise in front of two outlet tubes and be filled at one single stroke of the feed pump, or, the mold may be filled, intermittently advanced, from one tube by two strokes of the pump. It is, at all events, desirable to fill so large weights from two different orifices, because the material will, particularly with very irregular, richly ornamented molds, run better. Therefore the mold is advanced in the second instance between the two orifices. Both methods, however, necessitate a corresponding size and shape of the molds. The latter in so far as with molds of an irregular shape the material would not always run into the outlines of the mold. Then again molds of a small area but a great depth may be used. If with these the output of the pump were to be increased, the increase of the quantity of material would affect the determination of minute weights, so that it would not be possible to fill the largest and the smallest weight advantageously on the same machine. Contrary thereto the present invention allows of filling heavy

castings, also of richly ornamented shape, or molds of a small area but of great depth by means of two simultaneously acting orifice tubes, thus without the mold being intermediately advanced and with the certainty that the material will be poured within the outline of the mold and at suitably distributed points. The arrangement of the orifice tubes in two rows allows of disposing the tubes in pairs sufficiently close, while the distance in the same row remains a suitable one, and the adjustability of the tubes allows of covering with them a larger or smaller area.

The chief advantage of the new arrangement, therefore, consists in that larger weights may be cast at all events and in a suitable manner with several tubes at one time, so that the new casting machine may be used also for casting small and even the smallest weights from one tube, with the advantage that two rows of molds may be filled, and that the orifice tubes can be adjusted according to the size and distance between the molds. With the present arrangement, therefore, at the same working breadth the double output is secured whereas with the casting machines hitherto employed the output could be only increased by increasing the working width; but it is not possible to increase the working width at will without both constructional and attending difficulties. The orifice tubes may be furthermore row for row supplied from separate tanks, or separate chambers of one tank and thus sugars of different colors may be allowed to emerge at one time, which, if directed into the same mold, will fuse with each other and produce two-colored castings, whereas if directed into different molds, they will produce a mixture of differently colored pieces, which could, otherwise, only be obtained by mixing the various colors, separately produced, in lots with each other.

A casting machine according to the present invention is exemplified in the accompanying drawings, in which—

Figure 1 is a plan, but without the material tank; Fig. 2 is a vertical section through the casting device proper, being a longitudinal section with reference to Fig. 1; Fig. 3 is a further sectional transverse section; Figs. 2 and 3 are drawn on a larger scale than Fig. 1.

In Fig. 2, 1 is the tank for the material, in which the sugar is kept warm by means of the water jacket 2 and the steam pipe 3, so that it will remain liquid. When two materials of different colors are to be dealt with, a removable partition 4 is fitted into the tank 1. From the bottom of the tank passages 5 extend to the cylinders 6 of the single-acting suction and force pumps disposed in two rows, from which further passages or ducts 7 lead to the orifice tubes 8 arranged in two rows. 9 and 10 are controlling slides, the slides 9 controlling the suction ducts 5, and the slides 10 the force ducts 7. According to Fig. 2 the pump plungers 11 have moved inward at their force stroke, whereby they eject the material sucked during the preceding suction stroke through the now open delivery slides 10.

The orifice tubes 8 are fitted in rows in the round rods 12, which can be turned like the plug of a cock in the pans or bearings of the body. The bores in the rods 12 leading to the tubes 8 are spread upward in such a manner, that the clear passage remains the same, at whatever angle the tubes are set. The two rods 12 are coupled at their free ends by means of two gear wheels 13, and a worm wheel 14 fitted to the one rod, (Fig. 3) meshes with a worm 15 operatable by a handwheel 16. By this arrangement the tubes may be by rows approached to or removed from each other at their orifices.

The molds are disposed on endless bands which travel transversely to the rows of tubes, in the direction of the arrow in Fig. 2.

With reference to Fig. 1, the following may still be added: The tank 1 with the parts lying over the suction slides 9 being removed, the suction slides 9—9 are visible in Fig. 1, and these slides register with the delivery slides. The reciprocation of the two suction slides is effected by levers 17 and a cam 18, which, by aid of a second lever, situated beneath lever 17, also produces the reciprocation of the delivery slides 10. Further plungers 11 are visible. The plungers of the one row are coupled to the angle bar 19, those of the other row to the angle bar 20. The bar 19 couples the two bars 21 which are rectilinearly guided in the body of the machine. Two similar bars 22, situated beneath bar 21 are coupled to bar 20 (Fig. 2). The bars 21 and 22 are constructed, as shown in Fig. 2 as racks, in which engages the pinion 23, situated therebetween. By such means the two rows of plungers are coupled for a simultaneous but oppositely directed stroke. This stroke is started in the upper bars 21 by cams 24, and the bars 25 reciprocated thereby with dogs 26, 27, which abut against the ends of bars 21. The dogs 27 are adjustable by means of a transverse shaft 28 with pinions 29. At

the reciprocation of the bars 25 a part of the travel is idle, while during the remainder the motion is transmitted by the dogs to the sets of plungers. By adjusting the dogs 27 therefore, the ratio between the idle stroke and the effective displacement, thus consequently the stroke of the plungers and the quantity ejected may be varied.

When it is desired that not all plungers operate, those which shall remain at rest are disengaged from bar 19 or 20 respectively, by removing the respective splint pins 30 (Fig. 2).

The molds are advanced by the endless bands 31 which run over pulleys 32 and 33 and are intermittently advanced by a ratchet gear with variable stroke.

I claim:

1. Machine for casting confectionery comprising orifice tubes and ejector plungers disposed in two rows, the said tubes of both rows having tubular joints and adapted to be displaced relatively to each other.

2. A machine for casting confectionery comprising an ejector mechanism including two rows of pumps, two oscillatable rods disposed in parallel relation and respectively provided with a series of transverse feed slots and with delivery tubes registering with said feed slots, ducts connecting said pumps with said feed slots and mechanism for oscillating said slotted rods to change the distance between the orifices of the delivery tubes of the respective rows.

3. A machine for casting confectionery comprising an ejector mechanism including two rows of pumps, two oscillatable rods disposed in parallel relation and respectively provided with a series of transverse upwardly flaring feed slots and with delivery tubes registering with said feed slots, ducts connecting said pumps with said feed slots and mechanism for oscillating said slotted rods to change the distance between the orifices of the delivery tubes of the respective rows.

4. Machine for casting confectionery comprising orifice tubes and ejector plungers disposed in two rows, the said tubes of both rows having tubular joints and adapted to be displaced relatively to each other, said tubes fed from separate tanks or separate chambers of the same tank.

5. Machine for casting confectionery comprising orifice tubes and ejector plungers in two rows, the said tubes of both rows having tubular joints and adapted to be displaced relatively to each other, said ejector plungers adapted to be individually disconnected from the bar operating them in rows.

6. In a confectionery casting machine the combination of two rows of pumps disposed side by side, a supply tank, ducts connecting said tank with the induction ports of said pumps, two oscillatable rods disposed in

parallel relation and respectively provided with a series of transverse feed slots and with delivery tubes registering with said slots, ducts connecting the eduction ports of said pumps with said feed slots, valve mechanisms controlling the induction ports of said pumps, valve mechanisms controlling the eduction ports thereof, and means for oscillating said rods to alter the relative po-

sitions of the orifices of the respective rows 10 of the feed tubes.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

MAX OPPENHEIM.

Witnesses:

JOHANN LISSNOR,
AUGUST FUGGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."