No. 618,482. Patented Jan. 31, 1899.

T. ROBERTSON.

CONFECTIONERY ORNAMENTING MACHINE.

(Application filed Feb. 1, 1898.)

(No Model.) 3 Sheets—Sheet 1.

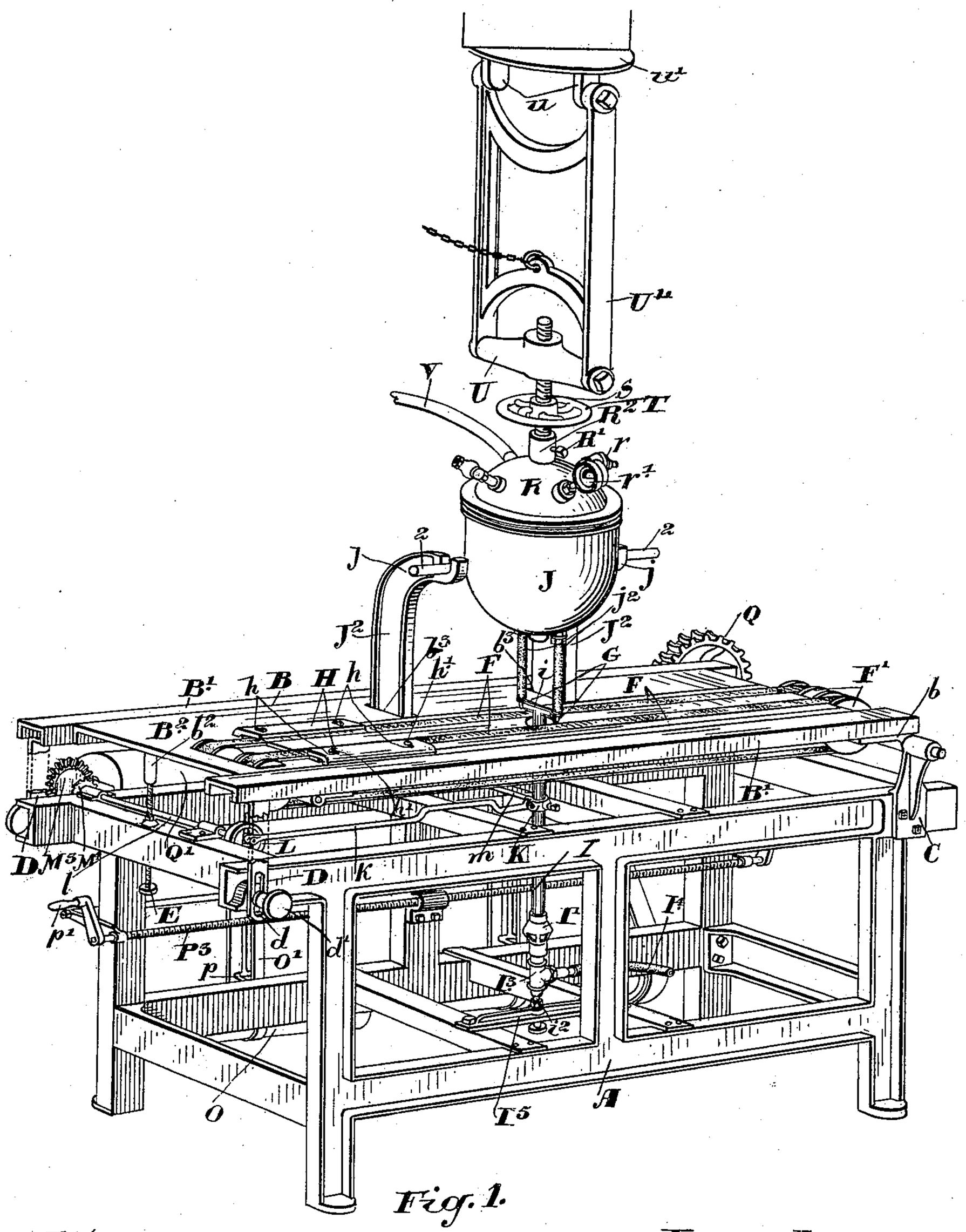

Fig. 1.

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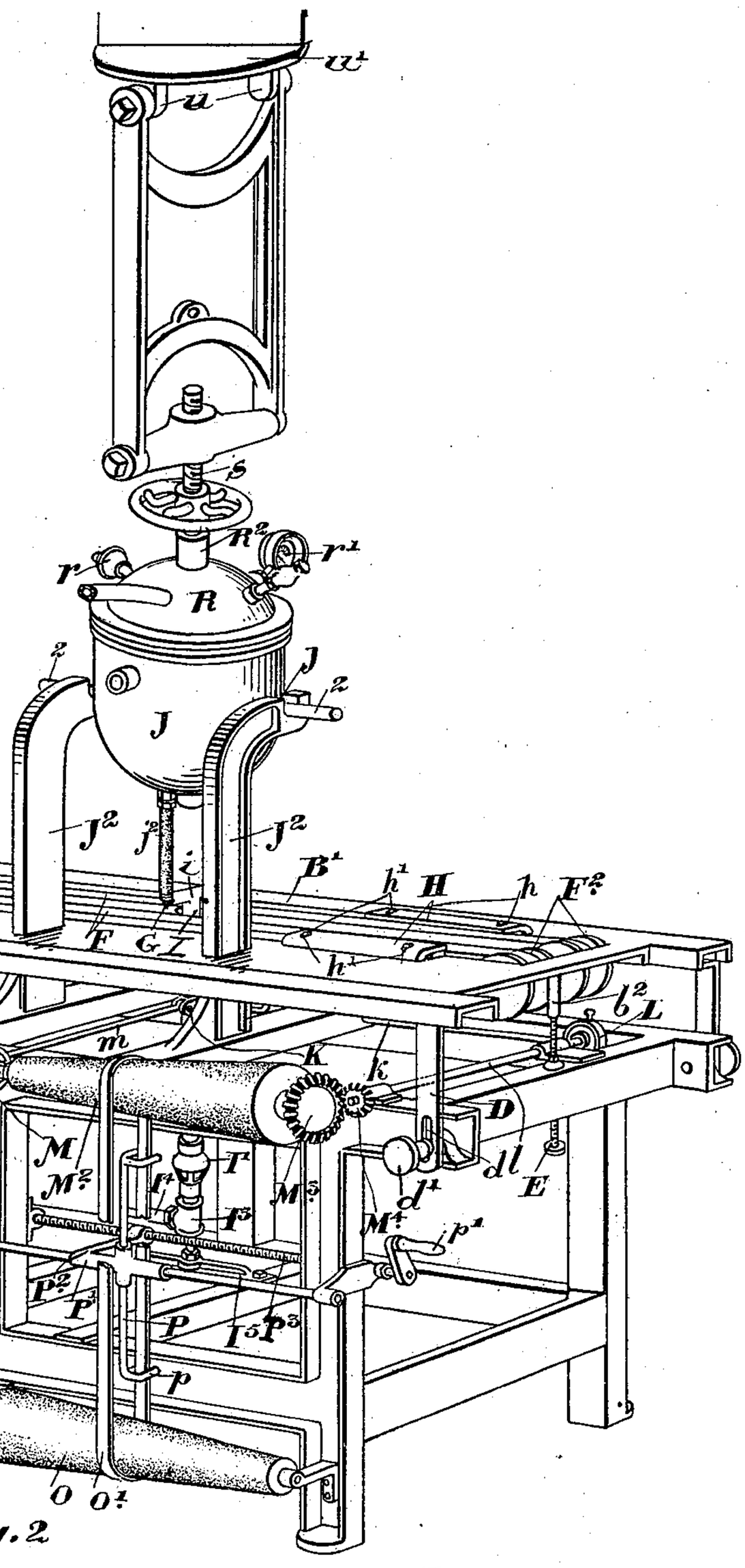

Fig. 2.

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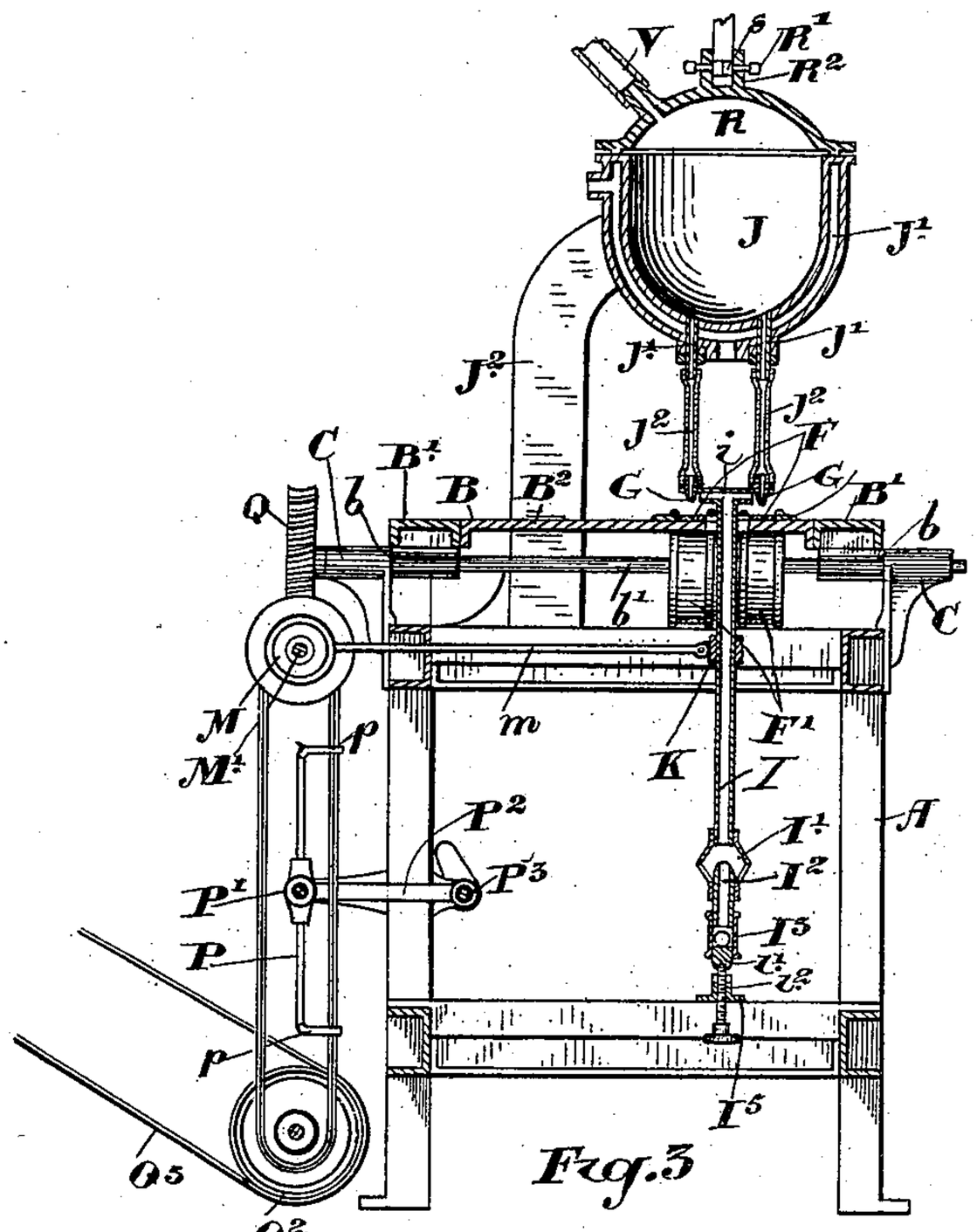

Fig. 3

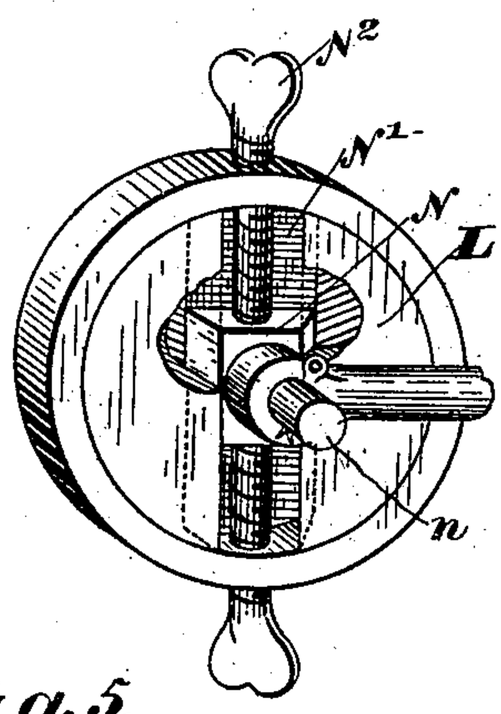

Fig. 5.

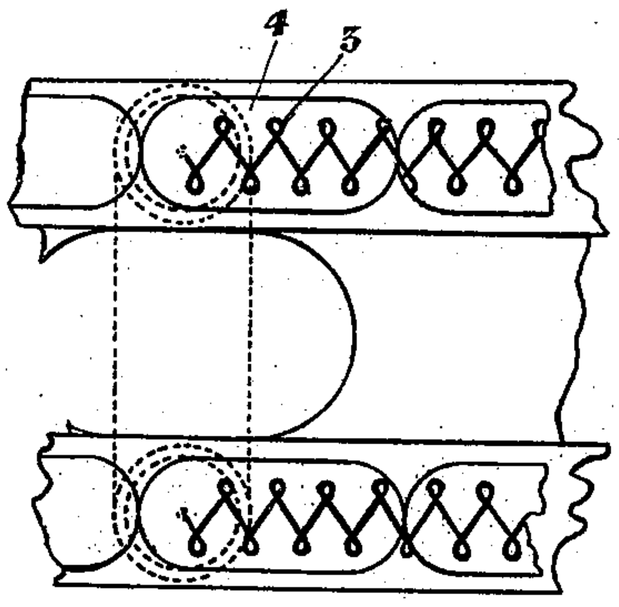

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

THOMAS ROBERTSON, OF TORONTO, CANADA.

CONFECTIONERY-ORNAMENTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 618,482, dated January 31, 1899.

Application filed February 1, 1898. Serial No. 668,727. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ROBERTSON, manufacturer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Confectionery-Ornamenting Machines, of which the following is a specification.

My invention relates to improvements in confectionery-ornamenting machines; and the object of the invention is to design a machine whereby chocolates, bonbons, and biscuits and other fancy confectionery may be decorated expeditiously; and it consists, essentially, of a reservoir to contain the decorating mixture, suitably supported and having flexible tubes leading from metallic tubes extending from the bottom of the reservoir, such flexible tubes being connected at the bottom to nipples suitably supported and driven, so as to have any desired motion over the articles to be decorated, which are preferably fed in under the nipples, from which the decorating mixture is caused to exude, by endless bands supported on a suitable table, the parts being otherwise constructed and arranged in detail as hereinafter more particularly explained.

Figure 1 is a perspective view of the machine complete. Fig. 2 is a perspective view from the rear of the machine. Fig. 3 is a vertical section through the machine. Fig. 4 is an enlarged plan view of the bands, showing one form of decorating, the nipples being shown in dotted lines. Fig. 5 is a detail of the adjustable crank-wheel.

In the drawings like letters and numerals of reference indicate corresponding parts in each figure.

A is the main frame of the machine, which is rectangular in form.

B is the table, which is provided with side bars B′ B′ and central portion B^2, affixed thereto. The side bars are provided at one end with end journal-brackets *b*, through which and the supporting journal-brackets C extends the cross-shaft *b*′. The opposite ends of the side bars B′ have secured to them the depending hangers D, having slots *d* at the lower end. Through the slots extend the clamping-screws *d*′, which may be loosened or tightened, so as to rigidly hold the table at this end when it has been adjusted to the desired height.

In order to provide for nicety of adjustment, I provide the screw-spindle E, which extends through the end bar of the frame and abuts a depending projection b^2 on the free end of the table B. I provide an adjustment at this end of the table for the purpose of bringing the table and bands F thereon nearer to or farther from the nipples G in order to accommodate different thicknesses of confections. The bands F are endless bands and extend over the end grooved pulleys F′ and F^2, suitably journaled in bearings attached to the table. The bands F extend over the top of the table, and in order to place the confections in position I provide the guides H H, located to the outside of each band and provided with slots *h* and set-screws *h*′. By this means I insure the confections being placed straight upon the band.

The nipples G, hereinbefore alluded to, are located in holes on the T-shaped end *i* of the heating-tube I, which is provided with an open cage I′ at the bottom end and a burner I^2 at the lower end of the cage. A T-shaped tubular joint I^3 is provided, into which leads a tube I^4, in which the gas is supplied to the burner. The lower end of the joint I^3 is provided with a socket *i*′, which is supported on the top of the set-screw i^2, extending through the cross-bar I^5. The heat passing up through the tube I and out through the open ends of the T-shaped upper end *i* serves to keep freely soluble the exuding chocolate, sugar, or other mixture.

J is a reservoir containing the mixture designed to ornament the confection. The reservoir J is surrounded by a water-jacket J′, in which hot water is held. The reservoir J is pivotally supported by trunnions 2 in bearing-joints *j* at the top of the arms J^2, which extend through slots b^3 in the table and are secured on the cross-bars of the main frame.

The reservoir J is provided at the lower end with downwardly-extending tubes *j*′ *j*′, leading from the bottom thereof, which tubes are connected to the nipples G G by the flexible tubes j^2, made of rubber or other suitable flexible material, in order to permit of a limited horizontal movement. In order to impart this horizontal movement, which in the present

instance is in all directions, I provide a coupling K, which is connected by a rod *k* to a crank-wheel L, secured on the end of a cross-spindle *l*, supported in suitable bearings on the end of the machine, and a rod *m* to a crank-wheel M, secured to a longitudinal shaft M′, supported in suitable bearings at the rear of the machine. Both the crank-wheels are preferably constructed as shown in Fig. 5, in which it will be noticed that the eye-shaped end of the operating-rod is connected to a pin *n* on the side of the block N, which is supported in a suitable guideway N′, extending diametrically across the wheel. Set-screws N^2 are provided, which by being adjusted up or down will impart the desired amount of throw through the rods to the heating-tube I, and consequently to the nipples G. The result of this throw is exhibited in one form of ornamentation 3 shown on the confection 4 shown in Fig. 4. The form of the ornamentation of course greatly depends upon the rapidity at which the bands cause the confection to move underneath the nipples G.

It is well known that in chocolate ornamentation the mixture must be kept warm, and for this reason I provide the water-jacket hereinbefore described.

I shall now describe the means by which the nipples are given the desired movement and the speed thereof changed as may be desired. On the shaft M′, I provide a cone-pulley M^2 and a beveled pinion M^3, which meshes with the beveled pinion M^4 on the end of the cross-spindle *l*. This bevel-pinion M^3 is made in this instance double the size of the beveled pinion M^4 to impart the desired ornamentation; but these beveled pinions may be of any desired size in relation to each other. The cone-pulley M^2 is connected to the cone-pulley O, supported on the spindle *o* by a belt O′, which passes through the shifting-jaws *p*, forming part of the bar P, attached to the sleeve P′. The sleeve P′ is provided with an arm P^2, through the end of which extends a screw-spindle P^3, provided with an end-turning handle *p*′. As the end of the screw-spindle P^3 rotates freely in the bearings, it will be seen that the adjustment of the belt on the cone-pulleys is easily effected. Such adjustment effectually provides for increasing or decreasing the rapidity of movement of the nipples G, as required by the degree of solubility of the mixture passing through them.

The endless bands F are driven at the hinged end of the table through the pulleys secured on the cross-shaft *b*′. On the outer end of the cross-shaft (see Fig. 2) is secured a worm-wheel Q, which meshes with the worm *q* on the end of the shaft *q*′, which is supported in suitable journals and on which is located the cone-pulley Q′. The cone-pulley Q′ is connected by a belt Q^2 to a cone-pulley Q^3 on the counter-shaft O, which is driven through the medium of the belt of the pulley O^2 and belt O^3 from any suitable source of power. The belt Q^2 is shifted upon the cone-pulleys Q′ and Q^3 by precisely the same style of mechanism referred to for shifting the belt upon the cone-pulleys M^2 and O.

By adjusting the belt Q^2 upon the cone-pulleys Q′ and Q^3 of course the speed at which the bands upon which the confections are placed are driven is also varied, according to the rapidity with which the mixture may be caused to exude from the nipples G in different classes of ornamentation.

Upon the top of the reservoir I provide a suitable cap R, having a safety-valve *r* and a pressure-gage *r*′ of any usual construction. The center of the top of the cap is connected by the pins R′, extending through the boss R^2 to the spindle S, such set-screws extending into a groove *s* in the spindle, thereby permitting of the free rotation of the spindle S and yet forming a means for lifting the cap. The spindle S is a screw-spindle for the major portion of its length and has secured to it a hand-wheel T. The upper end of the screw-spindle S extends through a cross-bar U, pivotally swung in the hanging frame U′, which in itself has the side bars of the frame pivotally connected to lugs *u*, attached to a top supporting-plate *u*′, suitably connected to the ceiling. The frame U may also be provided with a suitable counterbalancing-weight sufficient to counterbalance the weight of the cap R. Connected to the top of the reservoir is a tube V, through which the pressure is exerted upon the top of the mixture. By turning the hand-wheel T so as to raise the spindle in the cross-bar U the lid may be raised from the top of the reservoir and swung out into any desired position, any suitable counterbalancing-weight serving to retain it in such position. By this arrangement I am enabled to get at the contents of the reservoir or to fill it, as the case may be. It will also be noticed that the reservoir is swung on trunnions 2 at right angles to the cross-bar support for the cap, thus enabling me to secure an accurate fit of the lid upon the top edge of the reservoir. The lid would necessarily fit upon the top edge tight and be held thereon by means of the screw-spindle S, the cross-bar U, and its accompanying parts.

Although I show two nipples G and two bands for conveying the confections or other articles to be ornamented underneath the nipples G, it will of course be understood that I might use one nipple and one band or more than two nipples and bands, which would have the desired motion imparted to them.

What I claim as my invention is—

1. A confectionery-ornamenting machine comprising a reservoir for the mixture, a flexible tube depending therefrom having a suitable lower nipple and means for imparting to the tube any desired swing or motion as and for the purpose specified.

2. A confectionery-ornamenting machine comprising a nipple, a reservoir for the mixture, a flexible tube connecting the reservoir to the nipple and means for imparting to the

nipple any desired swing or motion and means for feeding the confections under the nipple as and for the purpose specified.

3. A confectionery-ornamenting machine comprising a nipple, a reservoir for the mixture, a flexible tube connecting the reservoir to the nipple, means for imparting to the nipple any desired swing or motion and bands to receive the confections suitably supported and driven to bring the confections in regular rotation under the nipples as and for the purpose specified.

4. A confectionery-ornamenting machine comprising a nipple, a reservoir for the mixture, a flexible tube connecting the reservoir to the nipple, means for imparting to the nipple any desired swing or motion, bands to receive the confections suitably supported and driven to bring the confections in regular rotation under the nipples, and guiding-bars placed in proximity to the bands as and for the purpose specified.

5. In a confectionery-ornamenting machine, in combination a nipple, a reservoir for the mixture, a flexible tube connecting the reservoir to the nipple, means for imparting to the nipple motion, means for feeding the confections lengthwise under the nipple and a device for conveying heat to the nipple as and for the purpose specified.

6. In a confectionery-ornamenting machine, in combination a nipple, a reservoir for the mixture, a flexible tube connecting the reservoir to the nipple, means for imparting to the nipple motion, means for feeding the confections lengthwise under the nipple, a hollow conveying tubular support open at the top end and suitably connected to the nipple and a suitable burner in the support as and for the purpose specified.

7. In a confectionery-ornamenting machine, in combination a nipple, a reservoir for the mixture, a flexible tube connecting the reservoir to the nipple, means for feeding the confections lengthwise under the nipple, a supporting-standard for the nipple, a suitable cross-shaft and crank-wheel thereon, a suitable longitudinal shaft and crank-wheel thereon and rods connecting such crank-wheels to a coupling on the pivotally-supported nipple-standard as and for the purpose specified.

8. In a confectionery-ornamenting machine, in combination the nipple, the reservoir, the flexible tubes connecting the reservoir to the nipple and means for imparting movement to the nipple, a table pivotally supported at one end, endless bands passing over the table and supported at the ends on suitable pulleys and suitably driven and means for supporting the free end of the table at any desired height above the frame as and for the purpose specified.

9. In a confectionery-ornamenting machine, in combination the nipple, the reservoir, the flexible tubes connecting the reservoir to the nipple and means for imparting an endwise and lateral movement to the nipple, a table pivotally supported at one end, endless bands passing over the table and supported at the ends on suitable pulleys and suitably driven, the slotted end hangers secured to one end of the side bars of the table and clamping-screws therefor and the set-screw extending through the frame and abutting a suitable projection on, or portion of the free end of the table as and for the purpose specified.

10. In combination the reservoir, the flexible tubes in communication therewith, the nipples to which the lower ends of the flexible tubes are connected, the supporting-tube suitably connected to the nipples, the socket at the bottom end of the tube, the cross-bar and set-screw extending through the cross-bar into the socket and means for imparting a requisite movement to the tube as and for the purpose specified.

11. In combination the reservoir, the flexible tubes in communication therewith, the nipples to which the lower ends of the flexible tubes are connected, the supporting-tube suitably connected to the nipples, the bracket at the bottom end of the tube, the cross-bar and set-screw extending through the cross-bar into the socket, means for imparting a requisite movement to the tube, the open cage in the tube, the gas-burner and tube leading thereto as and for the purpose specified.

12. The combination with the nipples, and movable supports for same, of the cross-shaft having a beveled pinion at one end, the shaft at right angles to the cross-shaft and having a beveled pinion at one end meshing with the beveled pinion on the end of the cross-shaft, the crank-wheels on the ends of the cross-shaft at right angles to same and the rods connecting the crank-wheels to a coupling on the movable support of the nipples as and for the purpose specified.

13. The combination with the nipples, and movable supports for same, of the cross-shaft having a beveled pinion at one end, the shaft at right angles to the cross-shaft and having a beveled pinion at one end meshing with the beveled pinion on the end of the cross-shaft, the crank-wheels on the ends of the cross-shaft at right angles to same and the rods connecting the crank-wheels to a coupling on the movable support of the nipples, the cone-pulleys on the shaft at right angles to the cross-shaft and the cone-pulleys on the main shaft, the belt for connecting the same and means for shifting the belt on the cone-pulleys as and for the purpose specified.

14. In a machine of the class described, the combination with the nipples and suitable support therefor, of the rods and crank-wheels, the groove extending across the center of the crank-wheels, the block located and longitudinally adjustable in same and having the ends of the rods connected thereto and the set-screws for adjusting the block as and for the purpose specified.

15. The combination with the bands, the

band-pulleys and table supporting the same pivoted at one end on the shaft of the band-pulley, of the worm-wheel on the end of such shaft, the worm on the said shaft, the cone-pulley on such shaft, the cone-pulley on the main shaft and a belt connecting the pulleys and means for shifting such belt as and for the purpose specified.

16. In a machine of the class described, the combination with the reservoir and trunnions extending therefrom, and the arms provided with jaws for supporting the trunnions, of the cap, and means at right angles to the trunnions whereby the cap may be raised and swung from over the top of the reservoir as and for the purpose specified.

17. In a machine of the class described, the combination with the reservoir and trunnions extending therefrom, and the arms provided with jaws for supporting the trunnions, of the cap, the boss at the top of the cap, the frame above it having a lower cross-bar and situated at right angles to the trunnions, the screw-spindle having a lower end extending into the boss at the top of the cap and grooved and held therein by suitable set-screws extending into the groove, the upper threaded end of the spindle extending through the cross-bar and the hand-wheel for manipulating the spindle as and for the purpose specified.

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