(No Model)

2 Sheets—Sheet 1.

L. R. HARSHA.

FINISHING MOLDING.

No. 536,804. Patented Apr. 2, 1895.

Fig. 1.

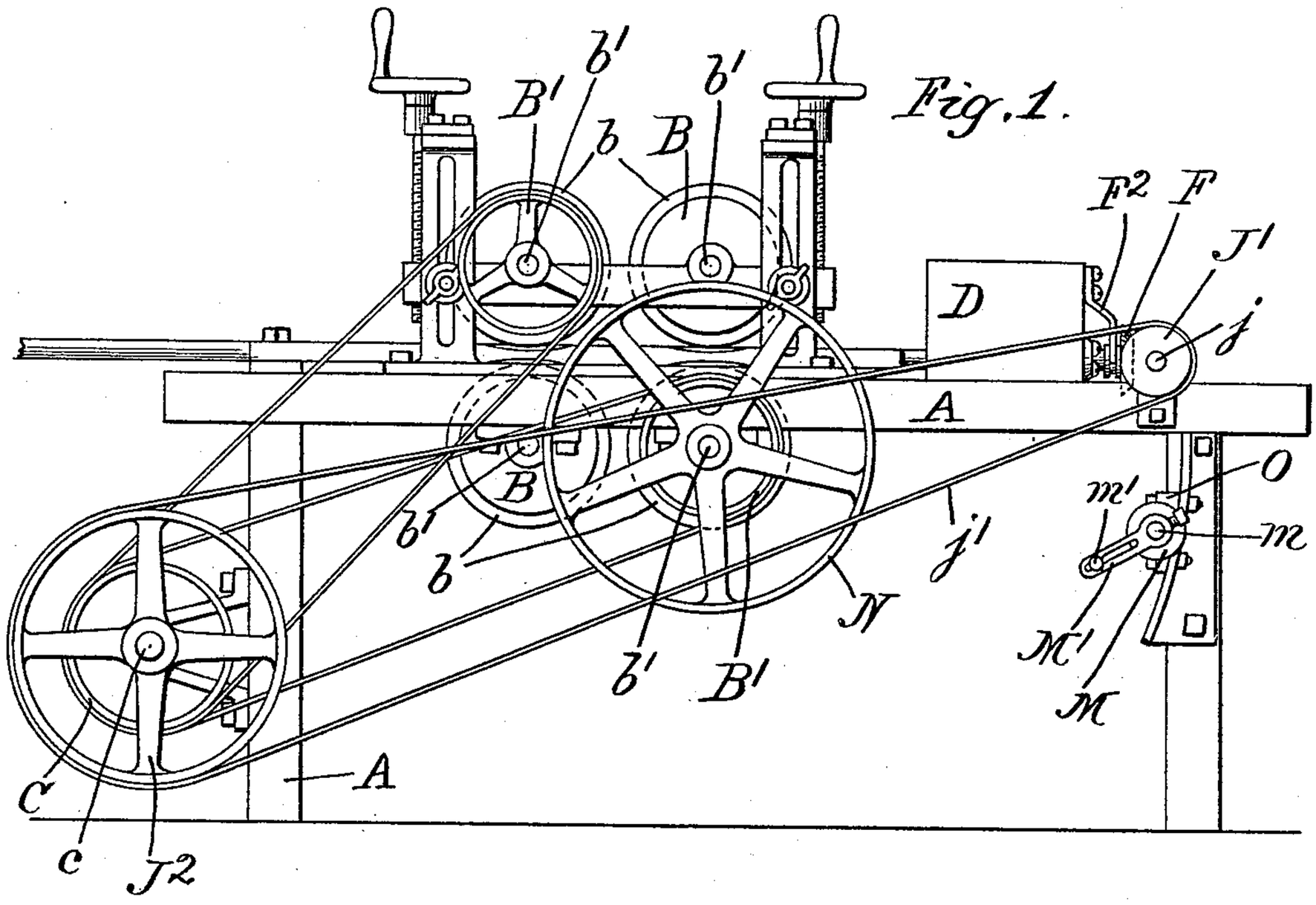
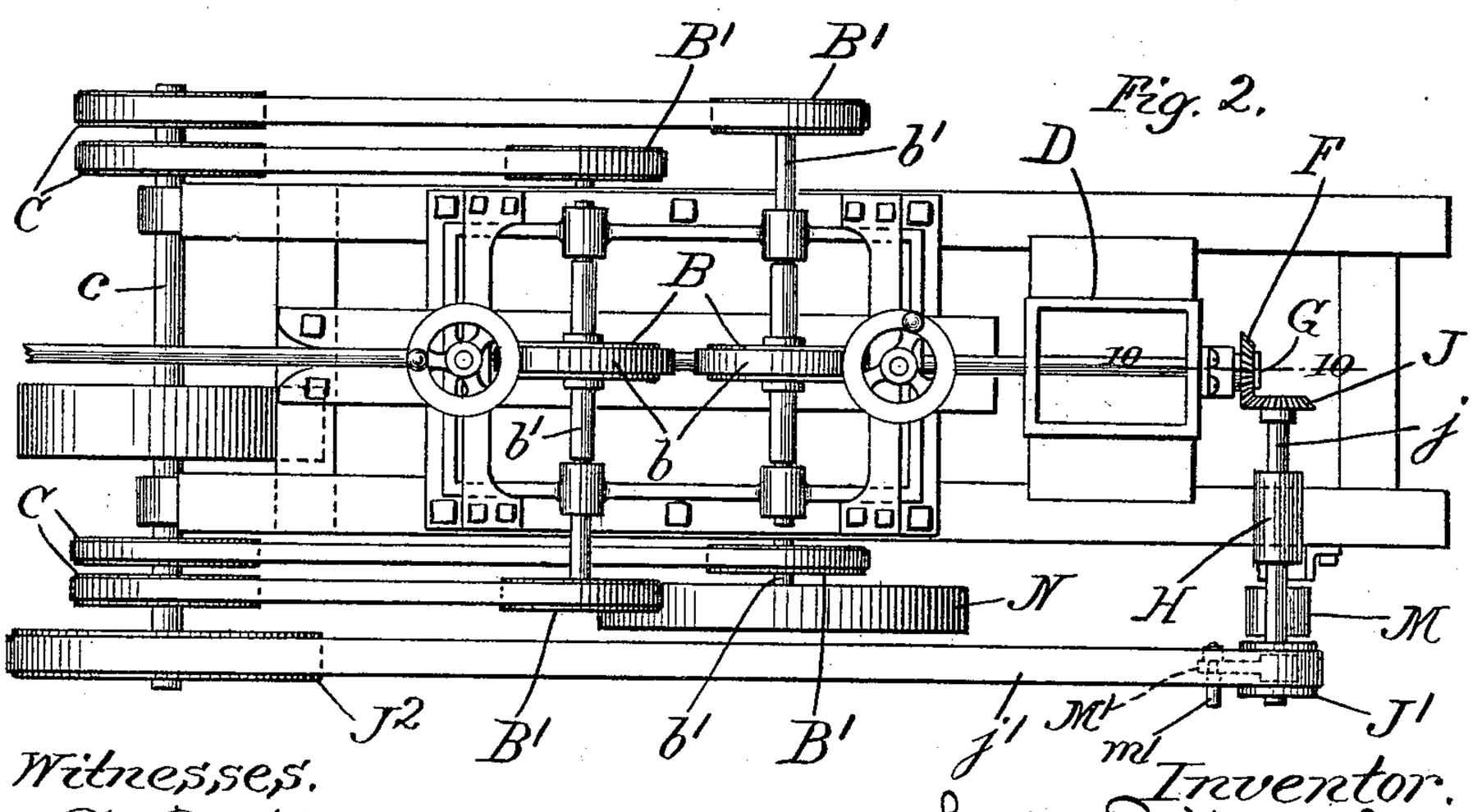


Fig. 2.



Witnesses.
E. T. Wray,
Jean Elliott.

Inventor.
Leslie R. Harsha
by Burton & Burton
his attys

(No Model.) 2 Sheets—Sheet 2.

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Fig. 10.

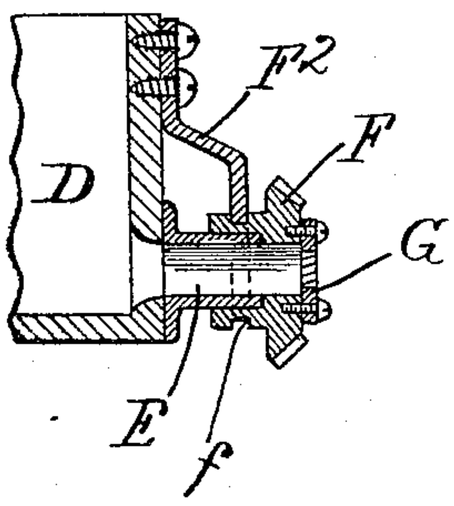

Fig. 3.

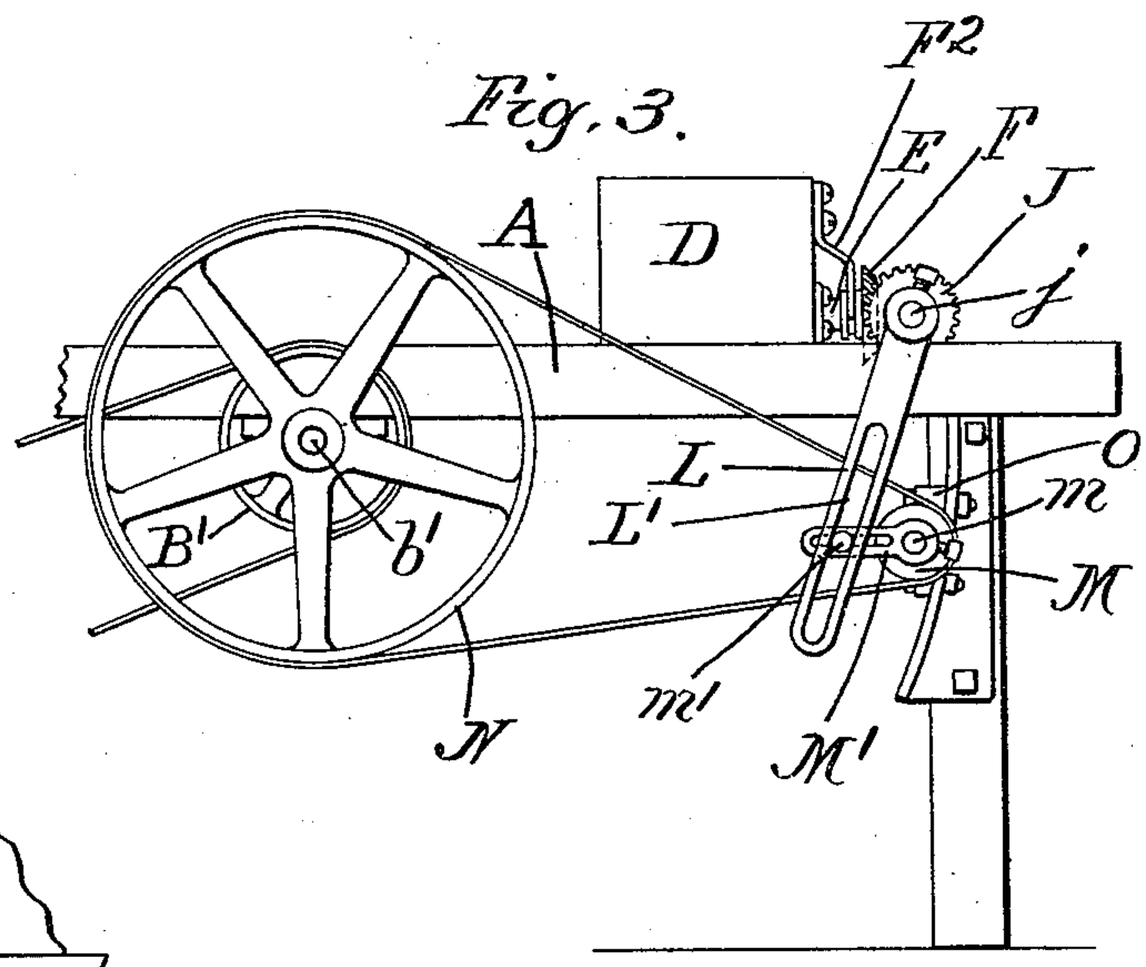

Fig. 4.

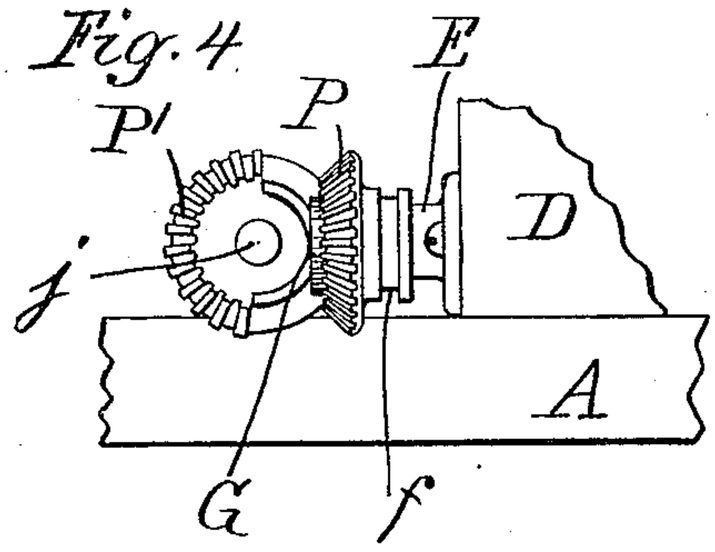

Fig. 5.

Fig. 8

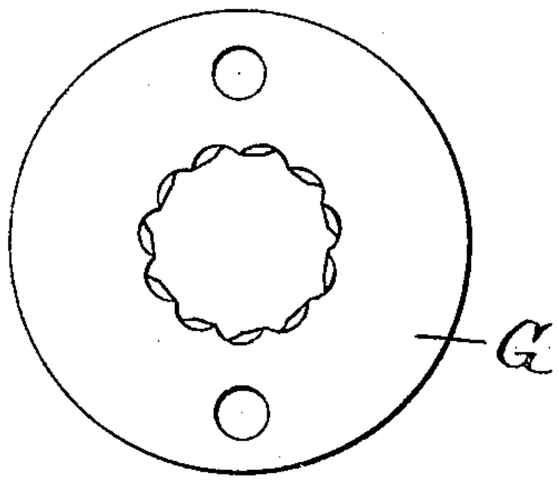

Fig. 6.

Fig. 7.

Fig. 9.

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UNITED STATES PATENT OFFICE.

LESLIE R. HARSHA, OF CHICAGO, ILLINOIS.

FINISHING MOLDING.

SPECIFICATION forming part of Letters Patent No. 536,804, dated April 2, 1895.

Application filed January 16, 1895. Serial No. 535,105. (No model.)

To all whom it may concern:

Be it known that I, LESLIE R. HARSHA, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Finishing Molding, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide a device by means of which plastic covering adapted to harden into an enamel may be applied to molding to finish the same, and ornamented by beads or ribs extending lengthwise of the molding but not in direct lines, but spirally or in serpentine course or intermittently straight and spiral or serpentine.

In the drawings,—Figure 1 is a side elevation of a machine for accomplishing the purpose of this invention, the same being shown in condition for making continuous spiral beads. Fig. 2 is a plan of the same. Fig. 3 is a detail side elevation of the same machine fitted up for making serpentine beads. Fig. 4 is a detail elevation of mutilated miter gears adapted to be substituted in the machine to adapt it for forming the ornamental ribs with alternate spiral and straight portions. Figs. 5, 6 and 7 are plans respectively of three forms of ornamented molding produced by my invention. Fig. 8 is a plan or front elevation of the die or forming plate. Fig. 9 is an axial section of the same. Fig. 10 is an enlarged detail section at the line 10—10 on Fig. 2.

The general plan of this machine is that it comprises feed wheels which advance the molding longitudinally, and thrust it through a pocket or reservoir containing the plastic material to be applied to cover the molding which is in condition to adhere to the molding as the latter is thrust through it, the molding emerging beyond the reservoir through a throat which terminates in a die cut in the pattern of the ribs with which the plastic covering is to be ornamented, so that the molding, covered with the plastic material, emerges at the farther side of the machine, the plastic covering being shaped to the pattern of the die. Such machines are commonly used to produce enameled molding having in the enamel straight ribs or fluting channels.

My invention consists in devices by which the same machine which, without my device, makes the straight ribbed molding, may make the spirally ribbed or "rope" molding, an enameled or covered molding having serpentine ribs, or having the ribs intermittently spiral or serpentine, and straight.

A is the frame of the machine.

B B B B are feed wheels having rubber tires *b b*, between which the molding is grasped and fed as the wheels revolve. Proper feeding motion is communicated to the wheels B B B B in any convenient manner, as from the wheels C C C C on the main shaft *c*, by belts which pass around pulleys B′ B′, B′ B′ respectively, on the shafts *b′ b′ b′ b′* of the feed wheels B. The bed of the machine will be provided with the usual rests and guides for the molding which need not be more particularly described.

D is the reservoir or pocket for the plastic material which is to form the enamel. Whiting being the principal ingredient of the material most commonly employed, I will, for convenience, hereinafter refer to this reservoir as the "whiting box." At the delivery side of the whiting box, there is secured a throat-piece E. Upon the outer portion of this throat-piece E, I journal the beveled gear F, and to the outer face of that gear, and in position to bear against the end of the throat-piece, I secure the die G, which is to give the pattern to the plastic covering to be applied to the molding. The hub of the beveled gear has an annular groove *f*, and a fork F^2 bolted onto the forward side of the whiting box strides the gear, and its arms engage in the groove *f*, and hold the gear against displacement in either direction. In a box H on the frame, a shaft *j* is journaled, and adapted to receive at one end a beveled gear J which meshes with and drives the beveled gear F. Said shaft has at the other end a pulley J′, which is driven by a belt *j′* from the pulley J^2 on the main shaft of the machine. The several wheels described are so proportioned to each other that the beveled gear wheel F makes one revolution for such tangential movement of the feed wheels as desired, according to the pitch of the spiral to be formed in the molding covering. An ordinary pitch for the spiral will be from one to two revolutions per foot,—that is, the spiral making a complete circuit of the molding in from six to twelve inches of the length of the molding.

To make a simple spiral, the molding is

fed into this machine in the usual manner for making straight bead ornamentation, with the result that the rotation of the beveled gear F, carrying the die around while the molding moves longitudinally without rotating, converts what would otherwise be a straight bead into a spiral bead. For the purpose of making serpentine bead ornamentation, it is only necessary to substitute for the continuous rotary movement of the gear F, an oscillatory movement about its axis. Such movement I produce by substituting for the pulley J′, a crank arm L, which has the slot L′, which is engaged by the wrist-pin m' on the crank-arm M′ of the shaft m, which is revolved by a belt around the pulley M, deriving motion from the pulley N, which may be on the shaft of one of the feed wheels B, though the particular source of the motion is not material. It will be seen that as the arc M′ revolves, it will oscillate the crank arm L, and give to the beveled gear F the desired oscillatory movement about its axis. To vary the angular extent of the serpentine waves of the ornamental beads thus formed, it is necessary only to adjust the crank-wrist m' in or out from the center, thereby giving to the crank-arm L a less or greater swing at each rotation of the shaft m.

In order to provide for a greater range in the angle of the serpentine ornament than could easily be provided by merely adjusting the crank-wrist m', (since it is best not to have a long crank arm which, having quite rapid motion, would unbalance the shaft more than is desirable,) I provide for adjusting the bracket O, on which the shaft m is journaled in an arc about the axis of the driving pulley N, and make the crank arm L and its slot long enough to adapt it to be driven by the connection described with the crank-wrist m' at any position to which the bracket C may be adjusted. By moving the bracket up nearer to the shaft j without changing the distance of the crank wrist m' from the center of its shaft, the angle of the serpentine will be increased, and by adjustment in the opposite direction it will be diminished, so that the minimum angle will be produced by locating the crank wrist at the innermost limit of the slot in which it is adjusted in the crank arm M′, setting the bracket O as far as permissible from the shaft j, and the maximum angle will be produced by giving the longest radius to the path of the crank wrist M′, and adjusting the bracket O, so that the wrist will engage the crank L at the nearest point possible to the shaft j.

For the purpose of making alternating spiral and straight portions in the beading, I substitute mutilated beveled gears P and P′ for the gears F and J, the driving beveled gear having its teeth cut away throughout sections of its circumference corresponding to the desired length of the straight portion of the beading. As illustrated, I have shown half the teeth cut away at one side, so that for each half revolution of the shaft j, spiral beads are formed on the molding, and for the other half, the beads continue straight from the ends respectively of the spiral beads. It will be understood that any variation of these proportions desired may be produced.

I claim—

1. In a machine for applying plastic enamel to molding, in combination with the devices for feeding the molding longitudinally, a reservoir for the plastic material in position to have the molding thrust through it by the feeding devices; an open-centered pattern-plate or die mounted about the mouth of the reservoir through which the molding emerges, and mechanism automatically actuated by the driving power of the machine for giving such plate movement about the axis of the molding while the same is being thrust therethrough: substantially as set forth.

2. In a machine for enameling cylindrical molding, in combination with the feeding devices and the enamel box or reservoir adapted to have the molding thrust through it by the feeding devices, a throat-piece secured to the delivery side through which the molding emerges, a gear mounted on such throat-piece, and an open die secured to the gear at the mouth of the throat-piece, and devices for rotating such gear while the molding is being actuated longitudinally: substantially as set forth.

3. In a machine for enameling molding, in combination with the devices for feeding the molding longitudinally, the enamel reservoir adapted to have the molding thrust longitudinally through it by the feeding devices; the pattern plate or die at the discharge mouth of the enamel reservoir, and devices for oscillating such plate about the axis of the molding while the latter is emerging through it: substantially as set forth.

4. In combination with the feeding devices and the enamel reservoir adapted to have the molding thrust longitudinally through it; a tubular throat-piece through which the molding emerges from the enamel reservoir fixed with respect to the path of the molding; a gear journaled on said throat piece and having the pattern plate or die rigid with it at the discharge mouth of the throat-piece; a mutilated gear and means for continuously rotating it, said mutilated gear engaging with the first-mentioned gear and adapted to give the latter intermittent rotation with intervals of rest while the molding is advancing through it: substantially as set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, this 12th day of January, 1895, at Chicago, Illinois.

LESLIE R. HARSHA.

Witnesses:
JOHN C. BOLTON,
LOUIS C. BLIAL.