

April 12, 1927.

N. B. SMITH

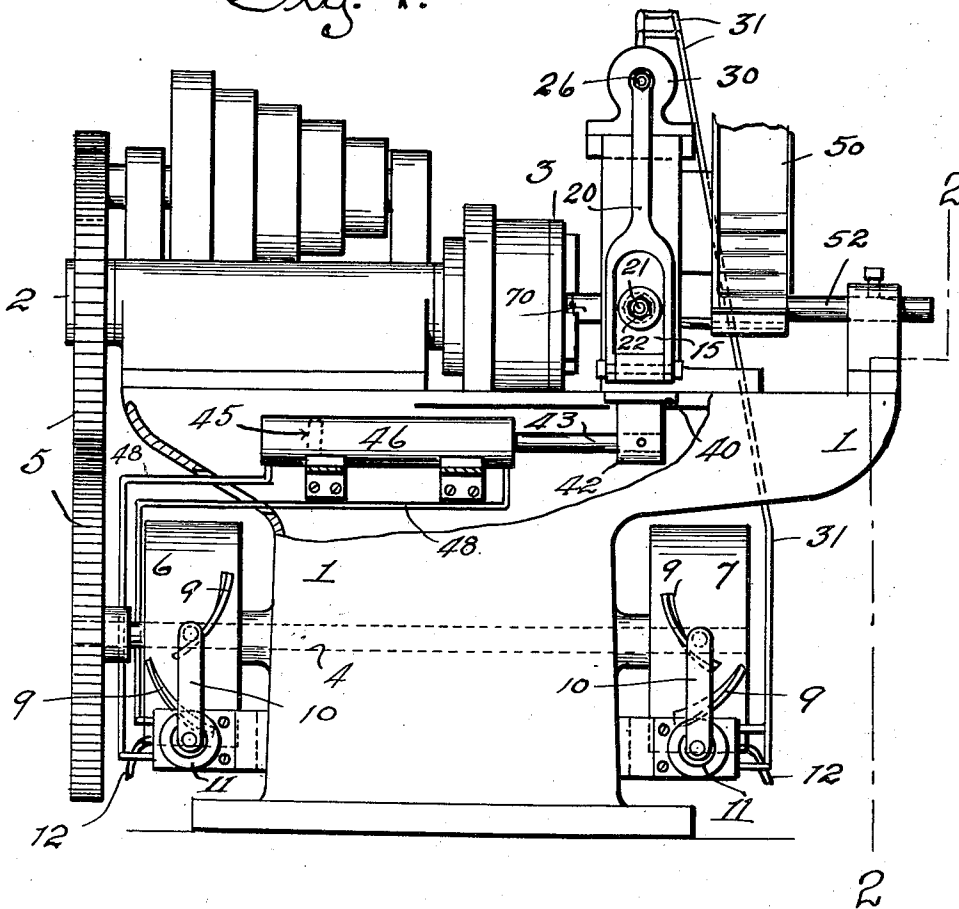
1,624,632

NIPPLE THREADING MACHINE

Filed June 10, 1926

2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

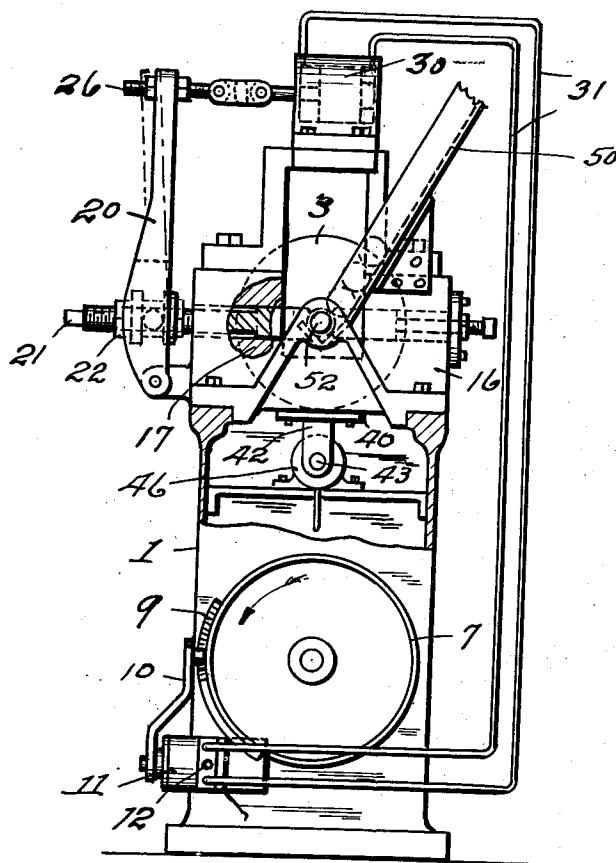


Fig. 3.

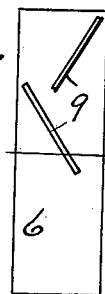
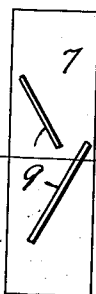


Fig. 4.



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UNITED STATES PATENT OFFICE.

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NIPPLE-THREADING MACHINE.

Application filed June 10, 1926. Serial No. 114,880.

This invention relates to improvements in nipple threading machines and the object in the present instance is to provide a machine in which a supply of nipples is fed to the cutter or threading head, and one in which the gripping of the nipple by the jaw, as well as the movement of the nipple while so secured in the jaw, toward and away from the cutter, is accomplished by pneumatic means.

The invention contemplates a device in which the pneumatic actuation of the gripping jaw is accomplished through the medium of a rotatable drum provided with one or more cams on its surface and an air valve so located with relation to the said drum cams, that the air supply will be regulated automatically as the machine operates.

Another feature is the actuation of the jaw with the nipple held therein, by a second rotatable drum provided with cams and also adapted to actuate an air valve to move the jaw toward and away from the cutter, the actuation of the two air valves through the cams on the respective drums, being arranged to alternate, to the end that when a nipple has been gripped in the jaws, it will move toward the cutter and back again, where the jaws will release the hold on the nipple.

The invention is more fully described in the following specification and clearly illustrated in the accompanying drawings, in which:—

Fig. 1, is a side elevational view of a machine with my invention applied thereto.

Figure 2 is an end view of the machine, partly in section, indicated by the line 2—2 in Figure 1.

Figures 3 and 4 show the drums, developed.

The numeral 1 designates the frame of the machine and 2 the rotatable shaft on which a cutter head 3 is mounted for rotation. 4 designates the drum shaft and 5 the gears through which rotation is imparted thereto from the power shaft.

This drum shaft carries two drums, 6 and 7, each of which is provided with cams 9 and these cams are adapted to contact with the ends of air valve actuating levers 10 of a pair of air valves 11. 12 designates the air inlets to the air valves.

The numeral 15 designates a nipple holding jaw, in which the nipple is held while being threaded. This jaw is made up of a

stationary member 16 attached to the frame, and a movable member 17 adapted to slide toward and away from the member 16, and this movement is accomplished through the medium of a pivoted bar 20, pivoted at its lower end to the frame and engaging a rod 21 which forms a part of the movable jaw member. The upper or free end of this bar 20 carries a piston rod 26 which has a piston thereon, adapted to move within the cylinder 30 and this cylinder has an air inlet at each end, connected by tubes 31 with the air valve 11 at the forward or right hand side of the machine, Figure 1.

The jaw structure and its bar 20 is mounted on a slidable plate 40, movable horizontally on the frame, and it has a depending lug 42 to which is secured a piston rod 43. The opposite end of this rod carries a piston 45, located within an air cylinder 46, which latter is provided with air inlets at both ends connected by tubes 48 with the air valve 11 at the rear or left end of the machine.

The numeral 50 designates a chute in which a supply of nipples are placed, to be fed to the gripping jaws, and to the end of the frame 1 is mounted a stationary horizontal ejector 52. The chute is mounted on and moves with the jaw structure and the ejector is so located as to dislodge the lowermost nipple in the chute when it is moved to the right.

The operation is as follows:—

Starting with the parts as shown in Figure 1, the nipple 70 is being threaded. When the drum 6, in its rotation, and through the medium of the cam thereon, has moved the valve lever 10 to the end of the path possible, the next cam will engage it and move the lever in the opposite direction, thus closing the air inlet into one end of the cylinder 46 and opening the inlet into the other end, and causing the piston 45 to move the rod 43 and the jaw structure to the right, or away from the cutter head, and this movement of the air valve lever on the drum 6 will be closely followed by the movement of the like air lever and air valve on the drum 7, so that, as the jaw moves away from the cutter, the air inlet to the cylinder 30 will also be changed from one end to the other, and the jaw will release its hold on the nipple. At this time, the jaw has been moved sufficiently to the right to cause the ejector 52 to engage the lower blank nipple in the

chute, and as the chute is moved, this blank will be pushed out of the chute and replace the one just released, and which has fallen into any suitable receptacle.

5 The continued rotation of the drum 6 will cause the cams thereon to again actuate the valve lever 10 in the opposite direction, and the jaw will move toward the cutter, while
10 to change the air inlet into the opposite end of the cylinder 30 and the jaw will grip the new blank just as it starts toward the cutter.

It is evident that the degree of actuation of the air valve levers may be determined by
15 the cams on the drums, so that the cutting may be regulated.

It is also evident that the movable jaw member 17 may be arranged to engage nipples of different diameters, by means of the
20 adjusting nut 22 on the rod 21.

What I claim and desire to secure by Letters Patent is:—

1. In a nipple threading machine, a frame, a rotatable cutter mounted thereon, a rotatable drum shaft, means for rotating the
25 cutter and the drum shaft, a pair of drums on the drum shaft, cams on said drums, air valves capable of actuation by said cams, a nipple engaging jaw, means for pneumati-
30 cally opening and closing the jaw and means for moving the jaw toward and away from the cutter, pneumatically, a nipple feed

chute carried by said movable jaw, and a stationary ejector on the frame and in alignment with the lowermost nipple in the chute. 35

2. In a nipple threading machine, the combination of a rotatable cutter head, a nipple engaging jaw, pneumatic means comprising a cylinder and connected valves for moving the jaw toward and away from the
40 cutter head, pneumatic means comprising a cylinder and connected valves for opening and closing the jaw, with drums having cams thereon for actuating the valves, a feed chute carried by the jaw and movable
45 therewith, and a nipple ejector in alignment with the lowermost nipple in the chute.

3. In a nipple threading machine, a threading cutter, a chuck for the nipples, said chuck comprising a stationary and a
50 movable member, pneumatic means for actuating the movable member of the chuck and pneumatic means for moving the entire chuck toward and away from the cutter, said
55 means comprising air cylinders and connected air valves, with rotating drums provided with cams for actuating the valves, a nipple chute carried by said movable chuck member and a stationary nipple ejector adapted for engagement by one of the nipples in the
60 chute when said chute is moved toward it.

In testimony whereof I affix my signature.

NEVIN B. SMITH.