

Jan. 27, 1931.

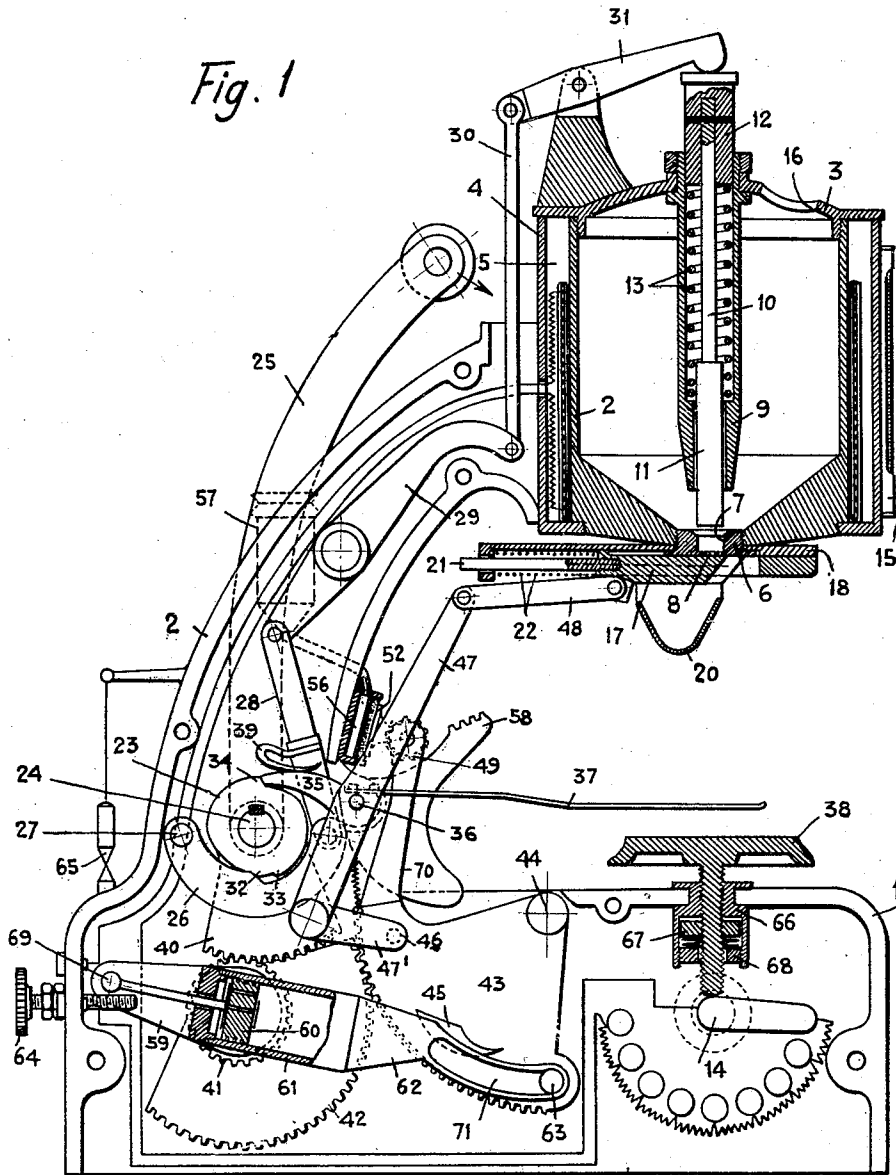
D. D. ZEROLLO

1,790,037

SEALING APPARATUS

Filed Sept. 5, 1929

3 Sheets-Sheet 1



INVENTOR  
D. D. ZEROLLO

BY *J. M. ...* ATTORNEY

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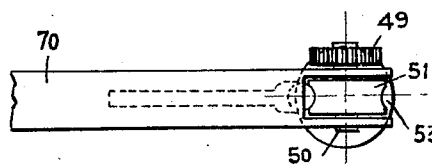
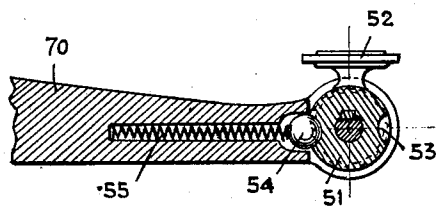
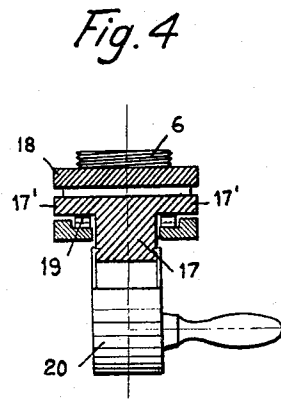
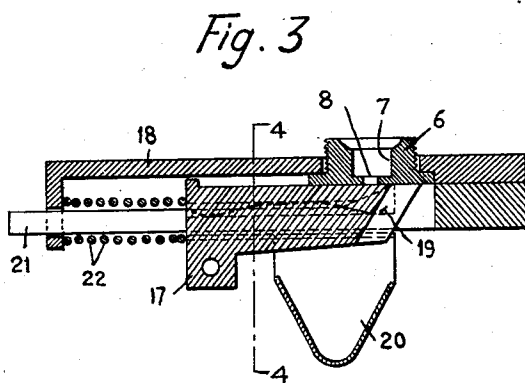
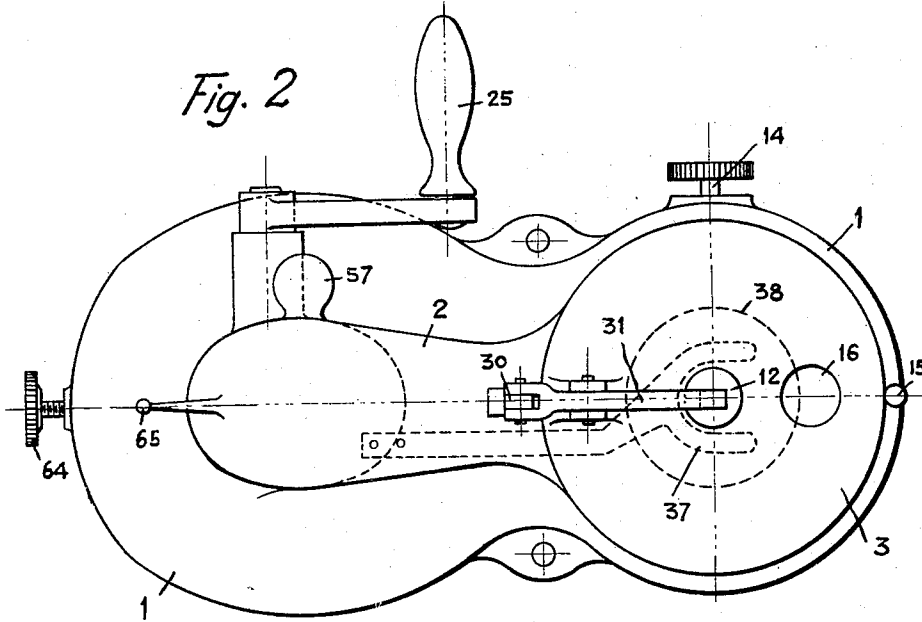
D. D. ZEROLLO

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INVENTOR  
D. D. ZEROLLO  
BY *J. M. Miller* ATT.

Jan. 27, 1931.

D. D. ZEROLLO

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Fig. 7

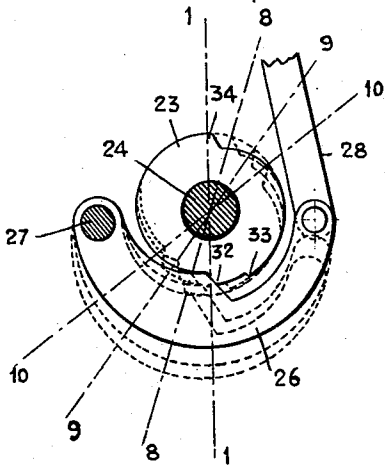


Fig. 8

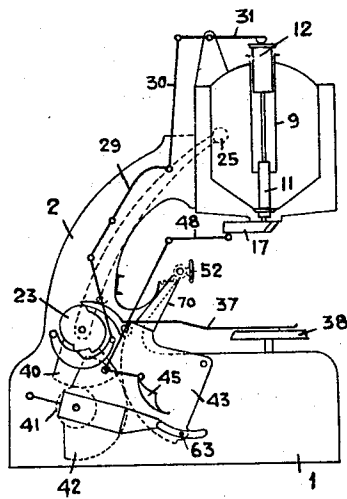


Fig. 9

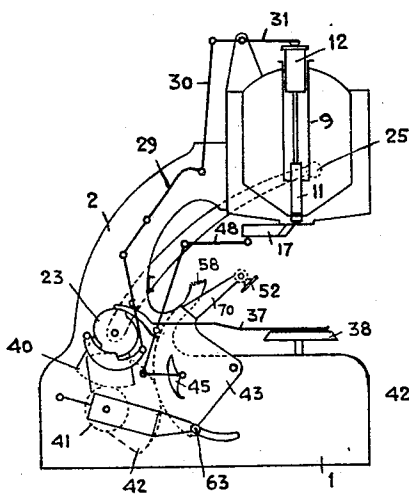
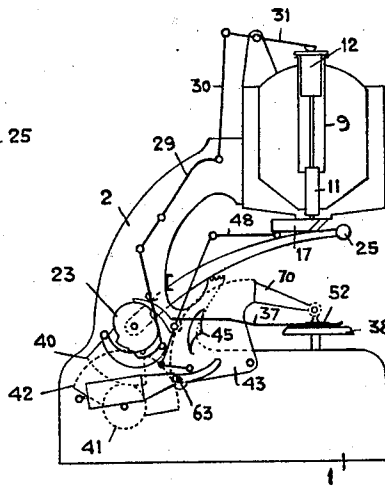


Fig. 10



INVENTOR  
D. D. ZEROLLO

BY *J. M. ...* ATT.

# UNITED STATES PATENT OFFICE

DANTE DAVIDE ZEROLLO, OF GENOA, ITALY

## SEALING APPARATUS

Application filed September 5, 1929, Serial No. 390,565, and in Germany January 10, 1929.

This invention refers to an apparatus for sealing letters and so on in which by the motion of a hand lever a determined quantity of wax will be expelled from a heated receptacle containing sealing wax upon a letter and so on to be sealed and subsequently supplied with a stamp.

The invention is now described in connection with a preferred form of embodiment of the invention illustrated in the drawings in which:

Fig. 1 is a view in elevation partly in section of the apparatus;

Fig. 2 is a top view of the same;

Fig. 3 is a longitudinal sectional view through the distribution slide;

Fig. 4 is a cross section according to line 4-4 of Fig. 3;

Figures 5 and 6 are a partial top view and a partial longitudinal sectional view of the stamp bearing arm.

Fig. 7 shows the different positions of the eccentric distribution disk which correspond with the main positions of the apparatus as they are diagrammatically illustrated in Figures 8, 9 and 10.

In these figures 1 is a metal frame which carries in its upper part a receptacle for the reception of sealing wax. This receptacle includes an inner cylindrical container 2 upon which is threaded the cover 3 and an outer coaxial shell 4 providing with the container 2 an annular heating chamber 5. In an opening of the bottom of this receptacle is threaded a bushing 6, having a cylindrical bore 7 which terminates in a calibrated hole 8. A hollow socket 9 fastened on the cover 3 is arranged axially in the receptacle. In this socket is coaxially arranged a rod 10, guided with its lower thickened end 11 in a corresponding bore of the hollow socket 9, its upper end being secured to a cylindrical head piece 12 also guided in a bore of the hollow socket 9. 13 is a spiral spring bearing between the head 12 and the shoulder formed in the socket 9 in the reduction of the internal bore of that socket to provide for the guiding of the part 11 of the rod 10, this spring serving to maintain the rod 10 at its upper limit of movement. The diameter of

the piston 11 corresponds with the cylindrical bore 7. In the annular heating space 5 is arranged an electric heating resistance, of which one conductor is connected with a resistance 14 fastened upon the frame 1 to enable the regulation of the heating resistance. 15 is a thermometer to indicate receptacle temperature. 16 is an aperture provided on the cover 3, through which the receptacle 2 can be supplied with sealing wax. The bore 8 of the bushing 6 is normally closed by a movable slide 17, guided upon a plate 18, fastened upon the bushing 6, the plate being formed with two lateral flanges 17' across lateral openings in the plate 18, whereby leaf springs 19 keep the slide 17 in contact with the bushing 6. The front part of the slide 17 is provided with a sharp edge to clear the edge of the hole 8 from wax drops which otherwise are likely to deposit there. This wax material then falls into a small box 20 fastened upon the slide. The back part of the slide carries a rod 21 which projects across a hole of the plate 18 and upon which is wound a helical spring 22 which normally tends to keep the slide in its closed position.

The operating device of the apparatus presents an eccentric disk 23 fastened upon the shaft 24 which can be rotated by a hand lever 25. Against the circumference of the disk 23 adheres a curved lever 26 which has its fulcrum in 27 upon the frame 1. The lever 26 transmits its motion by the rigging 28, 29, 30 and 31 to the piston 11. The eccentric disk 23 presents upon its lower part two elevations 32 and 33 which according to its engagement with an inclined face of the bent lever 26 compels two descending motions of this lever. These motions of the lever 26 insures contemporaneous descending motions of the piston 11. During the first motion the piston 11 moves down to the bore 7 and at the second motion the piston penetrates to the end of the bore 7 and expels the sealing wax contained in this bore through the hole 8. The eccentric disk 23 presents an elevation 34 which engages with the toothed end of a lever 35 having its fulcrum in 36. The lever 35 carries an arm 37 which is supplied

with a bifurcated end to cooperate with an adjustable supporting plate 38 in order to hold thereon the letter on which the seal is to be applied. The plate 38 has a threaded shank engaging a socket 66 fastened upon the frame 1, this shank carrying a nut 67 and the socket carrying a nut 68 between which is arranged a helical spring which prevents the displacement of the plate 38 after same has been adjusted. The lever 28 carries a leaf spring 39, which engages the lever 35 and keeps the rigging 26, 28, 29, 30 and 31 under tension. Upon the shaft 24 is further keyed the toothed sector 40. This toothed sector 40 is in engagement with a toothed wheel 41 rotatably arranged on the frame 1 and integral with a toothed sector 42 at its turn in engagement with a toothed sector 43, which has its fulcrum in 44. The sector 43 carries a segmental cam 45. This cam 45 during the ascending motion of the sector contacts with a roller 46 which is arranged at the end of a lever 47', the other end of which is fastened upon a lever 47 which has its fulcrum in 36. The cam 45 swings the lever 47 and thus moves the slide 17, coupled through a rod 48 with the lever 47, so that the slide 17 uncovers the hole 8. The arrangement of the cam 45 is such that the uncovering of the hole 8 takes place between the two prementioned motions of the piston 11. Upon the sector 43 is also arranged an arm 70 which carries at its free end a toothed wheel 49, arranged upon a pin 50 upon which is also keyed a roller 51 which carries an exchangeable stamp 52. This roller presents on its surface two spherical cavities 53, with which can be brought in engagement a ball 54 which is under the pressure of a spring 55. The stamp is thus held in either of two relative positions against casual displacement. In the inoperative position of the apparatus the stamp 52 is in contact with a sponge 56, which is kept in wet condition by means of a receptacle 57 filled with oil fastened on the frame 1. If the toothed element 43 is displaced upwardly, the wheel 49 engages the rack 58 and moves the stamp 52 to an operative position. Upon an arm 59 which is loosely arranged upon the fulcrum of the sector 42 is fastened a piston rod with corresponding piston 60, which rod has its fulcrum upon the arm 59 in 69. This piston is arranged in a dash pot cylinder 61 provided with an extension 62 at its turn supplied with a groove 71 traversed by a pin 63 which pin is fastened upon the sector 43. Thus it is possible to damp the motion of the moving parts both in movement toward operative and inoperative positions.

64 is a stop screw by means of which the travel of the piston as well as the travel of the sector 42 can be regulated. 65 is a lead loaded pendulum serving to bring the apparatus to the vertical position. The different phases which the machine assumes during its

operation are illustrated in the Figures 8, 9 and 10.

By the rotation of the eccentric disk 23 from its position of Fig. 1 to the position as shown in Fig. 8, the piston 11 moves to the upper end of the bore 7, the bifurcated paper holder 37 drops upon the plate 38 by the rising of the lever 35 on account of the elevation 34 of the eccentric disk 23. At the same time the stamp 56 leaves its inoperative position and moves towards the rack 58, while the cam 45 has reached the roller 46 of the lever 47, without at this time compelling a displacement of the slide 17. In rotating further the toothed sector 43 the cam 45 will now influence the roller 46 and the slide will move in its open position. At the same time the elevation 33 of the eccentric disk 23 pushes against the inclined face of the curved lever 26. In the meantime the pin 63 of the sector 43 has reached the end of the groove 71 in the extension 62 and the damping device is put in operation. By the further rotation of the eccentric disk 23 the elevation 33 is now displaced beyond the inclined face of the curved lever. The piston 11 is displaced within the bore 7 up to its end and expels the sealing wax across the hole 8 towards the outside, the same falling upon the paper placed upon the plate 38 and is there immobilized by the bifurcated arm 37. The cam 45 passes now beyond the position of the roller 46, whereby the slide 17 is again getting closed under the effect of the spring 22. The stamp 52 is now pressed upon the sealing wax dropped on the paper. A rotation of the hand lever 25 in the opposite direction brings the parts back in the position of departure. During the rotation of the sector downwardly the cam 54 will not influence the lever 47' as the same during the descending motion passes on at the right of the roller 46.

The apparatus can also be equipped with means so as to allow its operation by a pedal as well as by motor drive.

I claim:—

In a sealing apparatus of the type specified a wax containing heated receptacle, a piston for expelling the wax from this receptacle, a movable slide controlling the discharge of the wax from the receptacle, a cylinder open at its upper end arranged in the bottom of the receptacle for the reception of the sealing wax to be expelled having a diameter corresponding to that of the expelling piston and the open cylinder terminating at its lower end with an exit opening controlled by the slide.

DANTE DAVIDE ZEROLLO.