

A. WILZIN  
 APPARATUS FOR SEALING TINS.  
 APPLICATION FILED MAR. 4, 1907.

945,357.

Patented Jan. 4, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

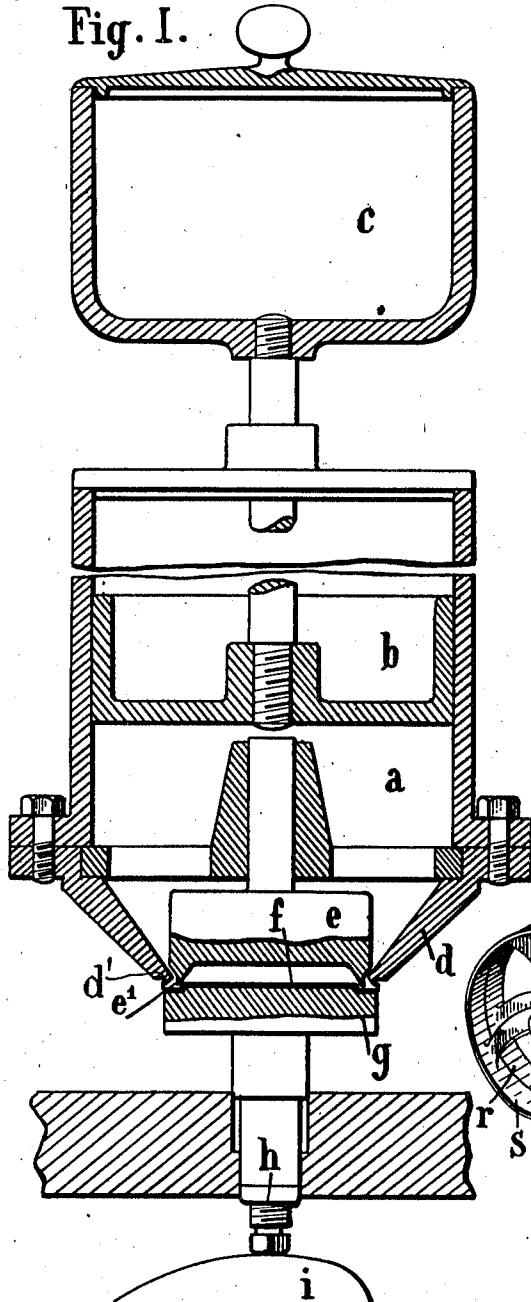
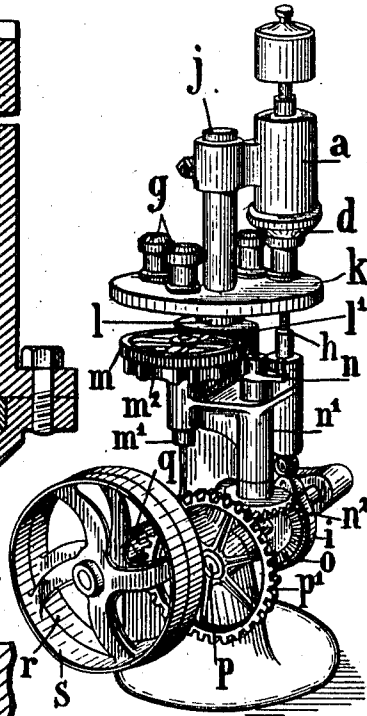


Fig. 7.



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 3 SHEETS—SHEET 2.

Fig. 2.

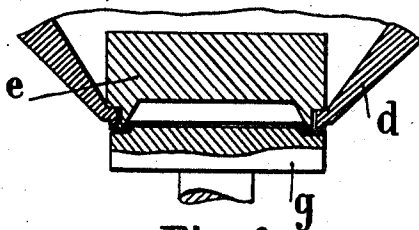


Fig. 3.

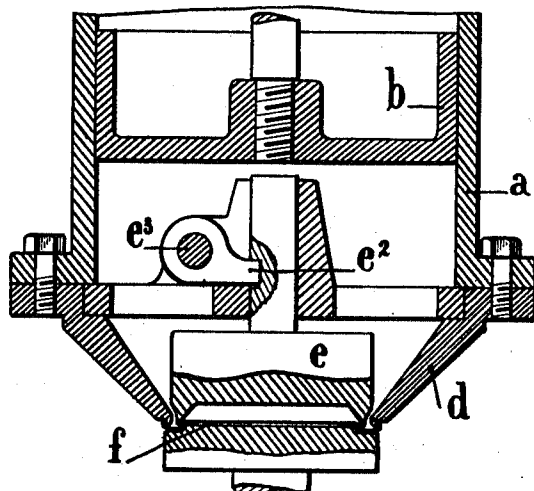
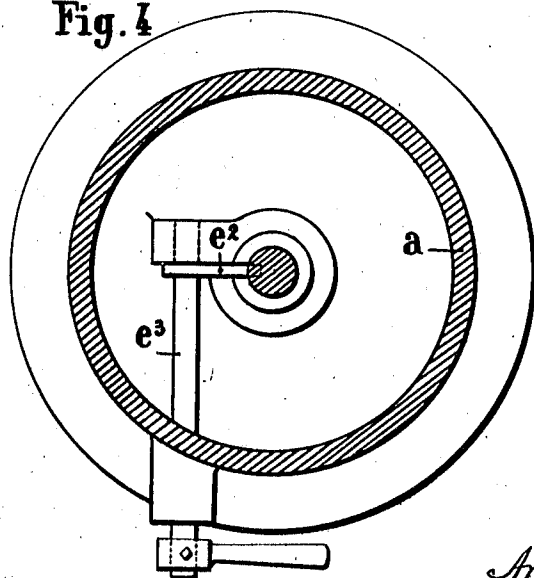


Fig. 4.



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Fig. 5.

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3 SHEETS—SHEET 3.

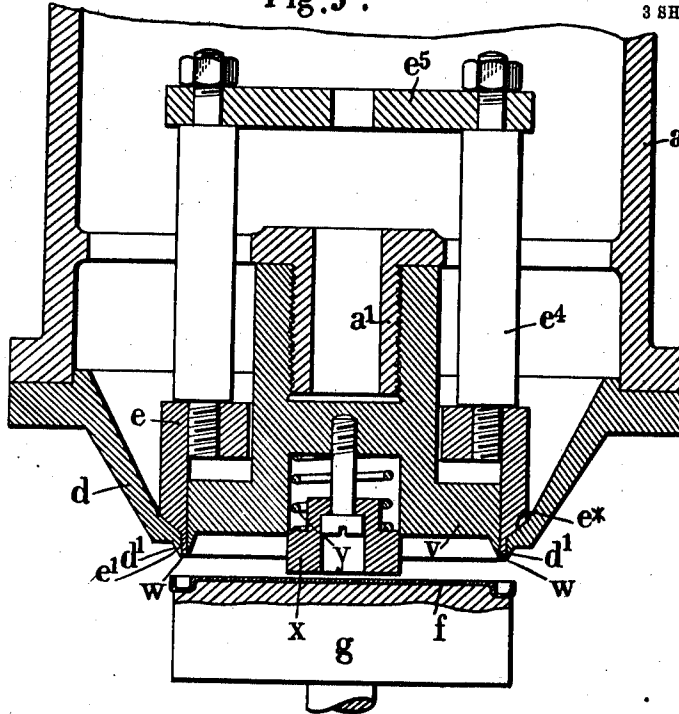
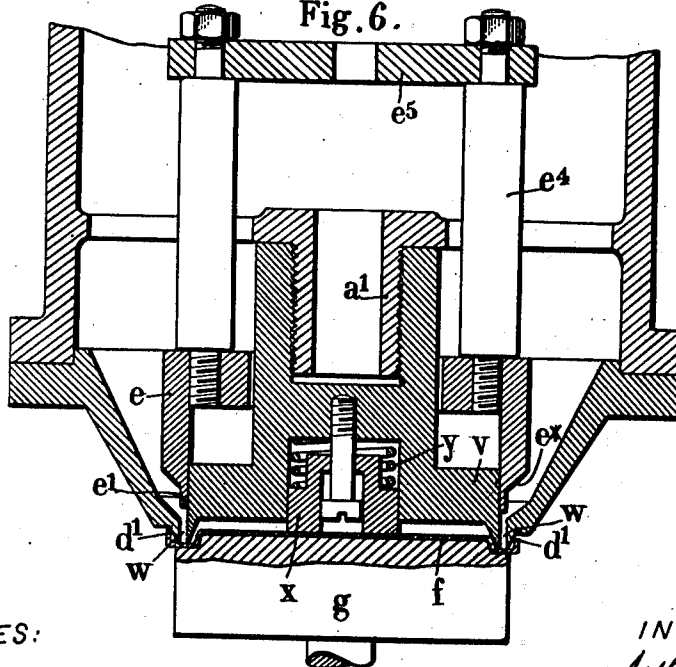


Fig. 6.



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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR SEALING TINS.

945,357.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed March 4, 1907. Serial No. 360,494.

To all whom it may concern:

Be it known that I, ARTHUR WILZIN, of 4 Rue Huntziger, in the city of Clichy, Seine, Republic of France, engineer, have invented an Improved Apparatus for Sealing Tins, of which the following is a full, clear, and exact description.

This invention relates to apparatus for the mechanical application of paste or other material for insuring a tight joint to lids, bottoms or other parts of cans or canisters; and aims to increase the speed of application, to effect the application of the material simultaneously at all points along the part of the lid to be coated, and to provide other features of advantage. Preferably the paste is discharged by gravity through an outlet between two lips, the configuration of which corresponds with that part of the lid to which the material is to be applied, both said lips being adapted to contact with the lid when the outlet is in use, and the outlet being opened or closed by changing the position of a piston relatively to the outlet.

In order to insure a uniform and sufficient application of the paste even in the case of its being granular, uneven or excessively thick, the inside piston may be of annular shape and be interposed between the edge of the aperture of the receptacle and a fixed central body, so as to force the paste positively on to the surface to be operated on.

The invention is illustrated by way of example in the accompanying drawings whereof—

Figure 1 is a vertical section of the apparatus. Fig. 2 is a modification thereof. Figs. 3 and 4 are a vertical and horizontal section respectively of another modification. Figs. 5 and 6 show in vertical section the closed and open state of still another modification. Fig. 7 shows in perspective the application of the apparatus to an automatically acting machine.

As illustrated in Fig. 1 the invention comprises a receptacle *a* for the paste or mastic wherein is a weighted plunger *b* bearing upon the surface of said paste. The rod of the piston *b* may be provided, as shown in the drawing with a receptacle *c* containing sand or other heavy material, or if desired the plunger *b* may be weighted by any other means, or it may be dispensed with altogether since, as a rule, the paste will descend by its own weight. The receptacle *a* is pro-

vided at its lower part with an inclined mouth *d* wherein is formed an aperture corresponding in configuration to the bottom or lid whereon the paste is to be applied. Said aperture is normally closed by a piston *e* resting by its own weight or controlled by a spring or any other means about the periphery of the aforesaid aperture in the base *d*, said piston *e* being formed with an annular lip *e'* adapted to rest upon the edge of the groove in the lid *f*. The bottom or lid *f* to which the paste is to be applied is placed upon a vertically movable support *g* which receives its upward movement from a lever or cam operated by hand, foot or mechanically. Or said support *g* may equally well be fixed and the receptacle *a* be adapted to move in a vertical plane. In order to regulate the raising of the support *g* its supporting rod may be provided with a screw *h* upon and in contact with which the actuating mechanism (for example the cam *i*) operates.

The operation of the apparatus is as follows. The support *g* upon which rests the bottom or lid *f* receives an upward vertical movement so as to cause the edge of said lid to be pressed against the edge *d'* of the conical base *d* and when near the end of its upward travel the lid meets the lip *e'* of piston *e* said piston is raised as shown in Fig. 1. The paste contained in receptacle *a* under pressure of plunger *b* escapes by way of the annular exit thus formed between the edges of base *d* and the piston *e* and falls into the channel or groove formed in the bottom or lid *f*. It is not essential that the piston *e* should bear upon a conical surface as presented by the base *d*; it may instead be provided with a shouldered edge adapted to rest upon a flange around the aperture in the base *d* as shown in Fig. 2, said alternative form providing, a similar means of exit for the paste to that described and corresponding to the configuration of the lid or bottom. The quantity of paste thus released will be determined by the height to which the piston *e* is raised and by the length of time during which it is maintained in that position. The raising of the piston *e* may be equally well controlled by any desired mechanical means, such for instance as is shown in Figs. 3 and 4, wherein a finger *e''* keyed upon a shaft *e'''* is operated at the desired moment by any suitable means, such as a lever or any other device, at the moment

the lid or bottom *f* is brought up to the aperture in the mouth of the receptacle *a*. When sufficient paste has been applied to the bottom or lid *f* the support *g* re-descends and the piston *e* immediately closes against its seat, thus cutting off the flow of paste.

The modification shown in Figs. 5 and 6, refers to a receptacle *a* having a fixed central body *v* screwed for instance upon a central plug *a'* thereby forming an annular aperture *w*. An annular piston *e* is adapted to slide upon this central body, opening or closing the annular aperture according to whether the piston is lifted or lowered. This annular piston *e* is connected through the rods *e'* to a disk *e''* attached to the actuating mechanism and embodies, (a) a cylindrical part *e'* acting as a piston in the annular aperture *w*; (b) a tapered shoulder *e''* placed above the cylindrical part *e'* and adapted to apply itself, in its closed position, upon the internal edge of the mouth *d* of the receptacle *a*. The central body *v* is provided with an extractor *x* controlled by spring *y* and adapted to expel the bottom or lid after the paste has been applied.

The operation of this apparatus is as follows: When the bottom or lid bears against the edge *d'* of the mouth *d* the piston *e* receives an ascending motion so as to entirely open the annular aperture *w* (Fig. 6) which causes the paste contained in the receptacle *a* to flow into the latter. Piston *e* then re-descends while the bottom or lid *f* is still pressed against mouth *d*; thus forcing the paste down upon the edge of the lid *f* and applying it in a uniform manner even when the paste is thick or coagulated. As previously stated, the quantity of paste thus supplied is determined by the height to which the piston *e* has been lifted and by the time during which the latter remains in a lifted position. As soon as the annular piston has finished its down-stroke, shoulder *e''* then bearing against the internal edge of the mouth *d* of receptacle *a*, support *g* descends; and extractor *x* causes the lid to follow its downward movement. The vertical motion of the annular piston *e* may be produced by any suitable mechanism.

Fig. 7 shows the invention applied to a continuously and automatically acting machine. In this machine the receptacle *a* is mounted upon a central shaft *j* about which revolves a table *k* carrying several (for example, four) supports *g*. The said table *k* receives intermittent movement so as to successively present the supports *g* beneath the receptacle *a*, and for this purpose the table is keyed upon a sleeve *l* mounted upon the central shaft *j* and carrying a pinion *l'* meshing with a second pinion *m* mounted upon an intermediate shaft *m'* and integral with a maltese-cross-shaped member *m''*. An arm *n* keyed to a second intermediate shaft

*n'* which receives continuous rotary movement by means of the bevel gear *n''*, *o*, and driving shaft *p* actuates said maltese-cross-shaped member. The driving shaft *p* carries a pinion *p'* meshing with a pinion *q* integral with the driving pulley *r*, and a loose pulley *s* is mounted upon the shaft beside said driving pulley *r*. A push rod *h* movable vertically and controlled by a cam *i* keyed upon the driving shaft *p* is mounted co-axially with the receptacle *a* and beneath the revoluble table *k*. When one of the supports *g* is brought opposite to the receptacle *a*, the cam *i* raises the push rod *h* which meets and presses upon said support and consequently causes the bottom or lid to be brought to the edge of the aperture in the conical base *d* of receptacle *a* as above described. The configuration of the cam *i* is such that the push rod *h* remains in its uppermost position during sufficient time to permit of the outflow of the desired quantity of paste, and then push rod *h* and the support *g* descend to their lowermost positions under the action of a counterweight or other suitable means and another angular movement is imparted to the revoluble table *k* so that the next successive support *g* is brought beneath the receptacle *a*.

The above described apparatus may be employed equally well for the application of material other than paste to a circular, oblong, oval, or other groove in the bottom or lid of a metal box or canister, for instance, for indiarubber joints, in which case it will suffice to substitute for the receptacle *a* the apparatus usually employed for this purpose.

#### Claims:

1. In a machine of the class described, in combination, a receptacle permanently supported in an upright position and having a capacity for carrying enough material for a number of applications, and having two lips between which is an outlet the configuration of which corresponds with that part of the lid upon which the material is to be applied, both said lips being adapted to contact with the lid when the outlet is open, and a piston adapted to close or open the outlet by changing its position.

2. In a machine of the class described, in combination, a receptacle permanently supported in an upright position and having a capacity for carrying enough material for a number of applications, and having two lips between which is an outlet the configuration of which corresponds with that part of the lid upon which the material is to be applied, both said lips being adapted to contact with the lid when the outlet is open, and a piston adapted to move into or out of said outlet to open or close the same.

3. In a machine of the class described, in combination, a receptacle permanently sup-

ported in an upright position and having a capacity for carrying enough material for a number of applications, and having two lips between which is an outlet the configuration  
5 of which corresponds with that part of the lid upon which the material is to be applied, both said lips being adapted to contact with the lid when the outlet is open, means for bringing the lid into contact with said two  
10 lips in applying the material, means for opening and closing said outlet, and means

for moving the lid to a position against the outlet before the latter is opened, and for removing it when the material has been applied.

The foregoing specification of my improved apparatus for sealing tins signed by me this 19th day of February 1907.

ARTHUR WILZIN.

Witnesses:

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MAURICE H. PIGNET.