May 17, 1955 J. P. WILKIRSON 2,708,301

CASKET SEALING CONSTRUCTION

Filed July 30, 1954 2 Sheets-Sheet 1

Fig. 1.

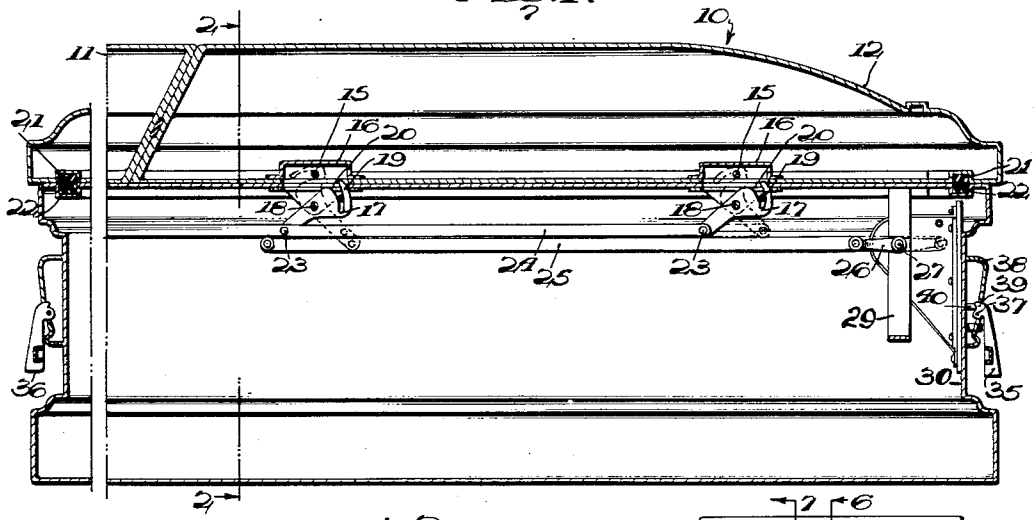
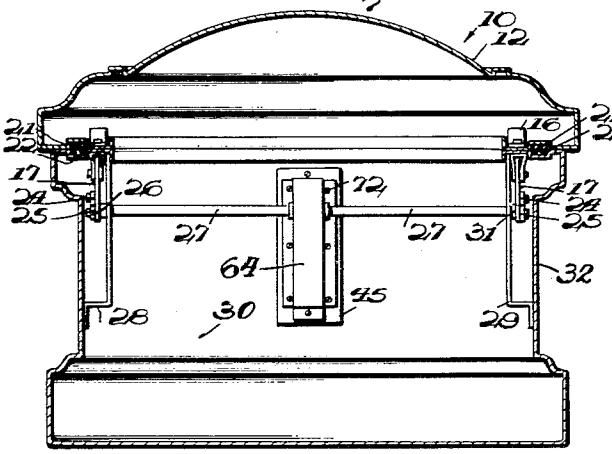


Fig. 2.



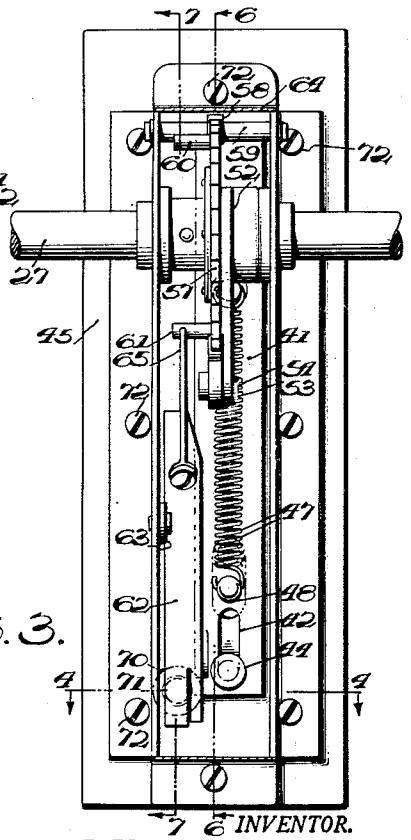


Fig. 3.

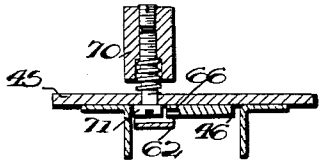


Fig. 4.

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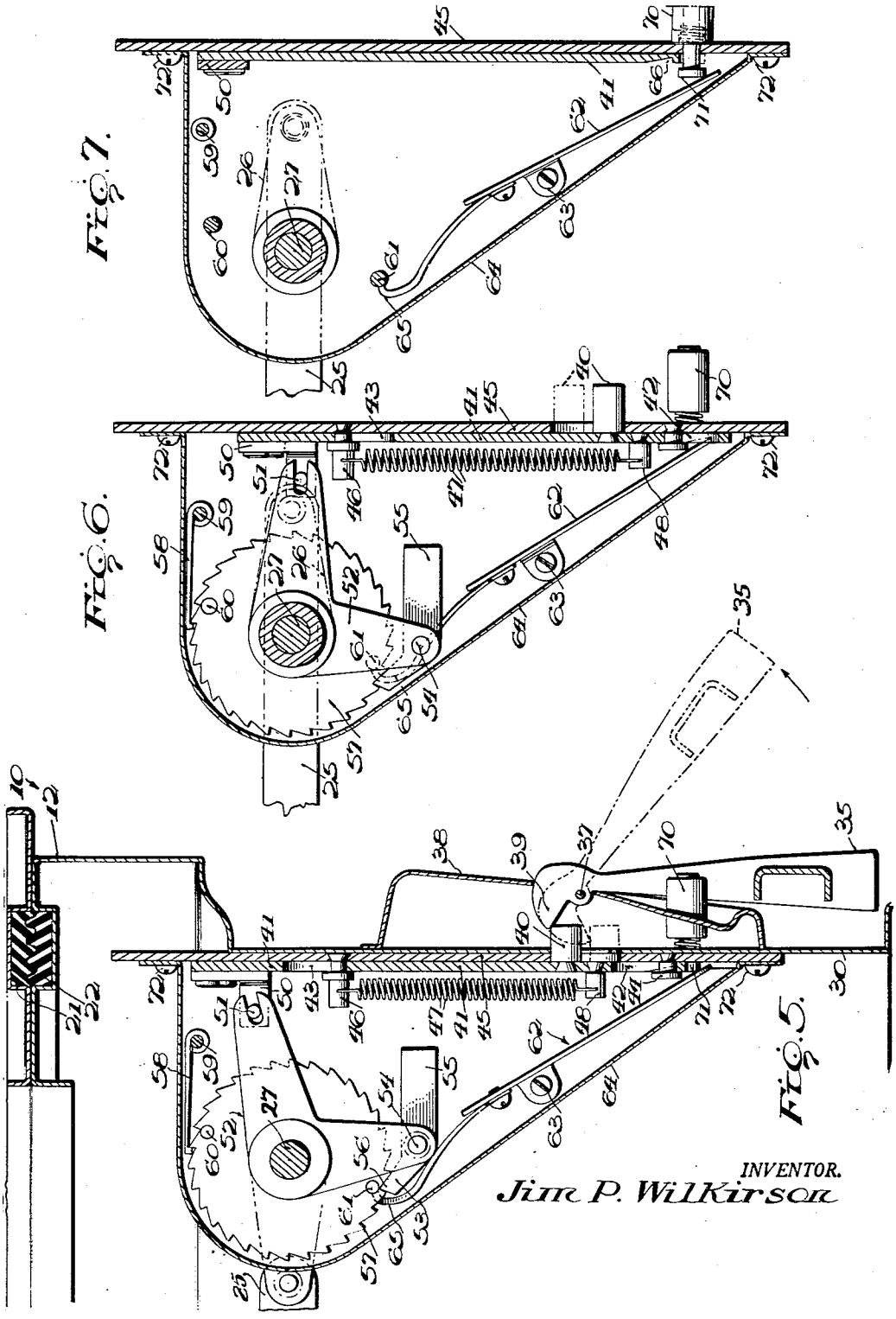


Fig. 7.

Fig. 6.

Fig. 5.

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CASKET SEALING CONSTRUCTION

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Application July 30, 1954, Serial No. 446,862

9 Claims. (Cl. 27—2)

This invention relates to casket closing and sealing mechanisms and is an improvement on the mechanism described and claimed in my pending application, Serial No. 384,726, filed October 7, 1953.

In the mechanism of the pending application, one of the casket handles at one end of the casket is swung up and down manually to operate a set of latches step-by-step, said latches being movable from fully retracted positions to the positions of full engagement wherein they pull down the lid or lids to seal the casket and lock said lids. When the lid or lids are closed, the latches cannot be seen and hence their positions (extended or retracted) cannot be determined. The result is that an inexperienced or inattentive operator of one of the mechanisms might only partly lock and seal the casket before it is handled during shipment or prior to an interment. The principal object of this invention is to provide a casket-closing and sealing mechanism which is so made that the latches will be fully extended when the handle is operated, that is, the latches cannot be moved beyond fully extended position back towards or into fully retracted position unless the operator so desires. Other objects will be understood from the following description of the preferred embodiment of the invention shown in the accompanying drawings forming a part of this specification.

In the drawings:

Figure 1 is a vertical sectional elevation of a casket equipped with a sealing mechanism embodying the invention, part of the casket being broken away;

Figure 2 is a section on line 2—2 of Figure 1;

Figure 3 is an elevation showing part of the latch-operating mechanism, the cover being removed to show the construction;

Figure 4 is a detail in horizontal section on line 4—4 of Figure 3;

Figure 5 is an enlarged vertical sectional elevation showing the mechanism, the operating handle, and part of the casket wall, lid and seal;

Figure 6 is a vertical section on line 6—6 of Figure 3; and

Figure 7 is a vertical section on line 7—7 of Figure 3.

Referring particularly to the drawings, I have shown part of a sheet metal casket 10 without any lining or finish on the interior or exterior, having two lids or caps 11, 12, lid 11 being at the head end and lid 12 being at the foot end. Each lid is hinged upon the top of the casket by at least two hinges, not shown here because they are a separate invention. It should be understood that the present invention may be used on a casket having a single lid mounted by several hinges.

In accordance with my invention, each lid or cap has a pair of spaced keeper pins 15 extending horizontally and rigidly fixed in small recesses 16 formed in the sheet metal lid adjacent the outer edge, said recesses opening on the underside to permit cam-action latches 17 to enter them to engage the keeper pins and draw down and lock the lid. Each latch 17 is a flat sheet metal member pivotally mounted on a pin 18 fixed in the casket wall adjacent its top edge so that the latch may swing in a vertical plane. Each latch 17 has a curved camming finger 19 defined by a curved slot 20 whose inner wall (toward pin 18) is an arc whose center is pin 18, while its outer wall is arcuate on a different center and extends outwardly in such a way that the slot 20 is wider at its opening or outer end than at its inner end. The camming finger of each latch engages keeper pin 15 and acts to draw down the casket lid and pull it tighter as the latch swings counter-clockwise, until finally the keeper pin is seated in the inner end of slot 20. The lid is then tightly locked and the plastic sealing gaskets 21, 22 (Fig. 5), located respectively in the lid and in the top edge of the casket, are tightly compressed to form a perfect seal around the entire perimeter of the casket. This compression may amount to one-eighth of an inch or even more.

The lower end of each latch 17 is an operating arm or lever having a pivot connection 23 with a reciprocating horizontal link 24 or 25 (only part of link 24 being shown in Fig. 1). The two illustrated latches 17 have identical angular positions and hence form with link 24 a parallel motion linkage. The portion of link 24 which is not shown will be understood to have similar pivot connections with two latches (also not shown) which lock and seal lid 11 at the head end of the casket. In short, four latches 17 are operated simultaneously to lock or unlock both lids. Link 25 extends to a pivotal connection with a crank arm 26 which is fixed on one end of a horizontal shaft 27 having bearings supported on brackets 28, 29 (Fig. 2) fixed at the foot end of the casket. Shaft 27 is parallel to the foot wall 30 of the casket and has another crank arm 31 on its opposite end. Another latching mechanism, exactly like the described mechanism 15—25, is mounted on the front wall 32 of the casket and the front edge of the lid or lids, the arrangement being such that both latching mechanisms are simultaneously operated when shaft 27 is rotated; the two crank arms 26, 31 being rotated from the position of full latch retraction shown in full lines in Fig. 1 to the position of complete locking and sealing indicated in dotted lines in that figure. These extreme positions of the crank arms, it will be noted, are precisely 180° apart.

Handle 35 at the foot end of the casket serves not only as a lifting and guiding handle but also is used as a lever to operate the latching and sealing mechanisms. The other end wall handle 36, at the head end of the casket, merely serves as a conventional handle and need not be described. Handle 35 is pivoted on a pin or pins 37 fixed to a sheet metal bracket or plate 38 which is welded to the foot wall 30; thus handle 35 may be rocked up and down, as indicated by the dotted lines in Fig. 5. A cam 39 is formed on the upper end of handle 35 and is of such dimensions that it engages a lug or arm 40 fixed as by a rivet upon a flat plate 41 which slides up and down like a plunger. Plunger 41 has two aligned slots 42, 43 extending longitudinally. A headed rivet 44 passes through the lower slot 42 and is secured to a plate 45, while a flanged pin 46 passes through the upper slot 43 and is likewise riveted to plate 45. Plate 45 may be welded to wall 30. A coil spring 47 is secured at its upper end to pin 46 (which is fixed) while at its lower end said coil spring is secured to a post 48 fixed to the slidable plunger 41; thus the plunger is normally pulled by said spring to its extreme upper position as determined by the length of slots 42, 43. Slots 42, 43 guide the plunger in its reciprocation responsive to lifting of handle 35 (whose cam 39 engages lug 40) and the pull of tension spring 37, which opposes handle 35 when operated.

Near its upper end, plunger 41 carries an arm 50 having a pin-and-slot connection 51 with one arm of a bell crank lever 52 that is loosely mounted on shaft 27.

The other arm of bell crank lever 52 extends downwardly and carries a pawl 53 by means of a pin 54, pawl 53 having a weighted end 55 and being rockable on pin 54. The toothed end 56 of the pawl engages a ratchet wheel 57 which is fixed to shaft 27. Ratchet wheel 57 preferably has thirty teeth. A holding pawl 58 is pivoted at one end upon a horizontal pin 59 (fixed to housing 64 to be described) to move in a vertical plane, the free end of pawl 58 normally engaging one of the teeth of the ratchet wheel. Pawl 58 is located above the ratchet wheel, while pawl 53 is below it. Each time plunger 41 is moved downwardly one stroke, by manipulation of handle 35, pawl 53 will be swung to push the ratchet wheel angularly the width of one ratchet tooth. Pawl 58 merely lifts as the ratchet teeth pass under it, but its down-turned end engages each tooth in turn to prevent retrograde movement.

As the ratchet wheel preferably has thirty teeth, each lifting of handle 35 to operate plunger 41 will cause the ratchet wheel, and hence shaft 27 and its crank arms 26, 31, to rotate one-thirtieth of a revolution. Thus fifteen oscillations of handle 35 will turn the crank arms through half a revolution or 180°, that is, from the full line position of Fig. 1 to the dotted line position, or vice versa. Handle 35 may be operated rapidly, so that fifteen oscillations may consume only a few seconds.

To make it impossible to move the latches beyond the fully locked position, I have provided certain parts which will now be described. Secured to the ratchet wheel 57 near its periphery but at diametrically opposite points are two pins 60, 61 which project at right angles to the plane of the ratchet wheel. These pins 60, 61 are provided to engage and rock a latch 62 which is pivoted at 63 to housing 64. The upper end of latch 62 carries a slightly curved wire 65 which is struck by pins 60, 61 alternately as the ratchet wheel rotates, causing latch 62 to rock from the position of Figure 7 to that of Figure 6. When the latch 62 has its lower end moved inwardly, said end will engage a notch 66 formed in the lower end of plunger 41, which will lock plunger 41 in its lowermost position. Further oscillation of the operating handle 35 will then be ineffective to move plunger 41, hence the latches cannot be moved. It will be apparent that this automatic locking of plunger 41 to make the mechanism inoperative (so far as latch movement is concerned) will take place after each fifteen strokes of the handle or twice in each revolution of crank arms 26, 31 (or shaft 27). Pins 60, 61 are so placed that the automatic locking of plunger 41 just described takes place when the lid latches are completely retracted (withdrawn within the edges of the casket) and also when the lid latches are completely locked, with the lids pulled down as tightly as possible to make a secure seal all around.

To release the plunger latch 62, a spring-cushioned button 70 is mounted on plate 45 and has its inner end 71 extended through an aperture in plate 45 to be engageable with the lower end of plunger latch 62 when the button is pushed inwardly. Compare Figures 6 and 7. Latch-releasing button 70 is accessible on the outside of foot wall 30, adjacent the operating handle 35. A housing 64 encloses the ratchet wheel, pawls and other parts of the mechanism, being secured by screws 72 upon plate 45. Housing 64 is preferably made airtight, even though shaft 27 passes through its walls, by seals not shown, and a gasket may be located between the housing and plate 45 to seal off the openings provided for operation of button 70 and the plunger-operating lug 40. The ornamental fabric covering the interior of the casket may completely conceal the entire mechanism, except for the outer end button 70, which as shown in Figure 5 projects slightly beyond the ornamental plate 38 but is scarcely noticeable.

From the foregoing description, it will be clear that the invention provides a "fool-proof" mechanism which makes it impossible to withdraw the lid latches unless the operator wants them withdrawn and deliberately pushes the latch-releasing button 70. The casket will remain locked and sealed except when unlatching is desired. Also the latches will be completely withdrawn to descend into the recesses in the edge of the casket, when the handle is operated after pushing button 70. The latches will never be half way extended, to be in the way of the keeper pins 15 when the lids are closed down, or to allow the seals to separate if the lids have been closed previously. At the same time, handle 35 may function as a lifting handle whenever the mechanism is locked against operation by latch 62.

Obviously the invention is not limited to the particular mechanism described herein but may have various forms within the scope of the appended claims. For instance, it is contemplated that a separate operating lever, not a casket handle, might be used to operate the latches as described herein, and said lever might be reciprocated instead of being pivoted like the described operating handle. Such a lever might be concealed or camouflaged by having the appearance of an ornamental plate. Other changes will occur to those skilled in the art.

Having described one embodiment of my invention, what I claim as new and desire to secure by Letters Patent is:

1. In combination, a casket having a cap or lid hinged thereto; a latch movably mounted on the casket; a keeper pin secured to the lid in position to be engaged by the latch when the lid is closed; a casket-supporting handle pivotally mounted on one end of the casket; a mechanism actuated by swinging said handle for moving said latch into and out of lid-locking engagement with said keeper pin; an automatically acting mechanism for rendering the first-mentioned mechanism immobile only when the latch attains its full locking or fully released position so that said handle is then usable only as a handle; and an operator-controlled means for releasing said automatically acting mechanism so that the handle may operate said first-mentioned mechanism.

2. In combination, a casket having a lid or cap hinged thereto; lid-latching means including movable latches; a lever movably mounted on the exterior of the casket; a mechanism for operating said lid-latching means, said mechanism being mounted on the interior of the casket; said lever when moved manually causing said mechanism to operate said lid-latching means to move to lid-locking position or to lid-releasing position; means partly carried by said mechanism for automatically stopping operation of said mechanism whenever the latches attain fully released position or full locking position; and operator-controlled means for disengaging said automatic stopping means so that the lid-latching means may again operate.

3. The invention defined in claim 2, wherein the lever is also a handle connected to the casket so that the casket may be lifted thereby.

4. The invention defined in claim 2, wherein the means for automatically stopping operation of said mechanism is a latch operated twice during each complete cycle of movement of said mechanism, and the operator-controlled means is a spring-actuated button mounted on the casket adjacent said lever and adapted to be pushed inwardly against its spring to engage the last-mentioned latch.

5. The invention defined in claim 2, wherein the mechanism for operating the lid-latching means includes a plunger having a lug engaged by said lever to cause said plunger to move downwardly, a spring attached to the plunger causing it to move upwardly, means to guide the plunger in its movements, a pawl operatively connected with said plunger, a ratchet wheel operatively connected with said pawl, a shaft extending horizontally at one end of the casket, said ratchet wheel being fixed to said shaft, a crank fixed to said shaft, and a linkage pivotally con-

nected with the outer end of said crank and operatively connected with said lid-latching means.

6. In combination, a casket having a cap or lid hinged thereto; complementary lid-securing means on the casket and lid, and including movable latches; handles pivotally mounted at opposite ends of the casket for facilitating lifting and handling the same; a mechanism located almost wholly on the interior of the casket for operating said latches, step-by-step, said mechanism including a plunger having a lug which projects through one of the end walls of the casket; the handle that is mounted on the last named end wall having a cam which engages said lug when said handle is swung upwardly; a spring attached to said plunger and normally holding it in uppermost position; a pawl operated by the plunger; a ratchet wheel turned intermittently by the pawl; a shaft turned intermittently by the ratchet wheel; mechanism coupling said shaft with said latches; means locking said plunger automatically twice during each rotation of the ratchet wheel; and operator-controlled means accessible from outside the casket for releasing said automatic plunger-locking means.

7. Casket lid-locking mechanism including a plurality of swingable latches, a linkage for swinging said latches simultaneously, a crank operating said linkage, a shaft rotating said crank, a step-by-step mechanism for turning said shaft including a lever adapted to be movably mounted on an end wall of a casket and movable manually, an automatic latch for stopping operation of said step-by-step

mechanism after a predetermined number of steps, and an operator-controlled releasing means for releasing said automatic latch after engagement.

8. The invention defined in claim 7 wherein the step-by-step mechanism includes a ratchet wheel fixed to said shaft, a pawl for moving the ratchet wheel, a reciprocable plunger having means for operating said pawl, guide means for the plunger, means projecting from the plunger and engaged by said lever to effect movement of the plunger in one direction, a coil spring automatically moving the plunger in the opposite direction.

9. Casket lid-locking mechanism including a plurality of swingable latches; a linkage for swinging said latches simultaneously; and mechanism for operating said linkage including a lever, a reciprocable plunger operated by said lever, a pawl and ratchet assembly operated by the reciprocable plunger, a shaft turned intermittently by said pawl and ratchet, a crank on said shaft and connected to said linkage, a pair of pins fixed to said ratchet and extending outwardly therefrom, a pivoted latch adapted to be engaged and swung by said pins, said plunger having a notch adapted to receive the end of said latch when it has been swung by one of said pins, the pins being 180° apart on the ratchet and being so disposed as to trip the latch to engage it in said notch when the lid locking latches are at their full-locking or fully-retracted positions, and operator-controlled means to release the latched plunger.

No references cited.