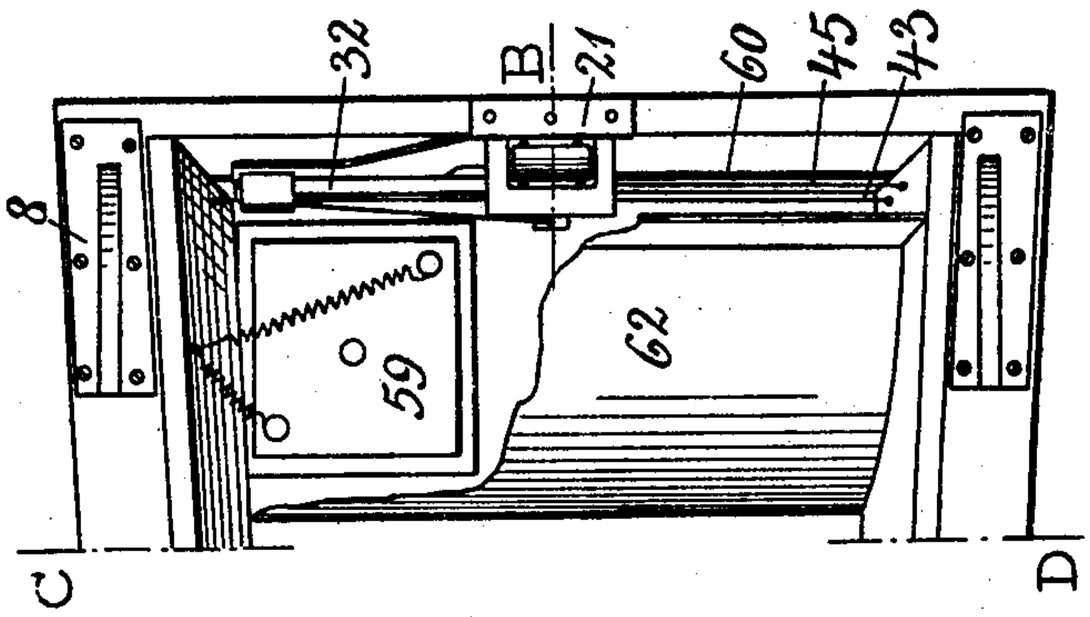
No. 898,021. PATENTED SEPT. 8, 1908.

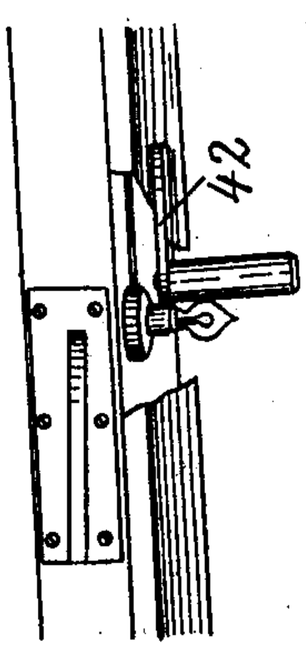
J. J. TOOLEN.

SAFETY COFFIN.

APPLICATION FILED JAN. 29, 1907.

3 SHEETS—SHEET 1.





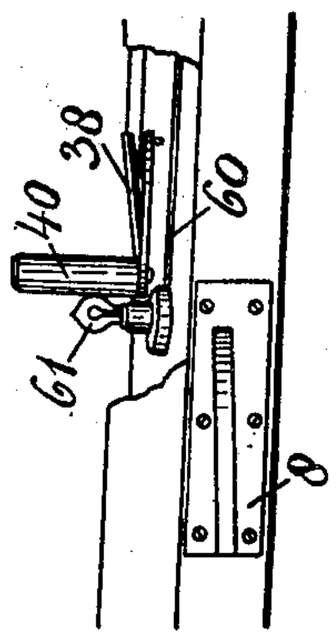
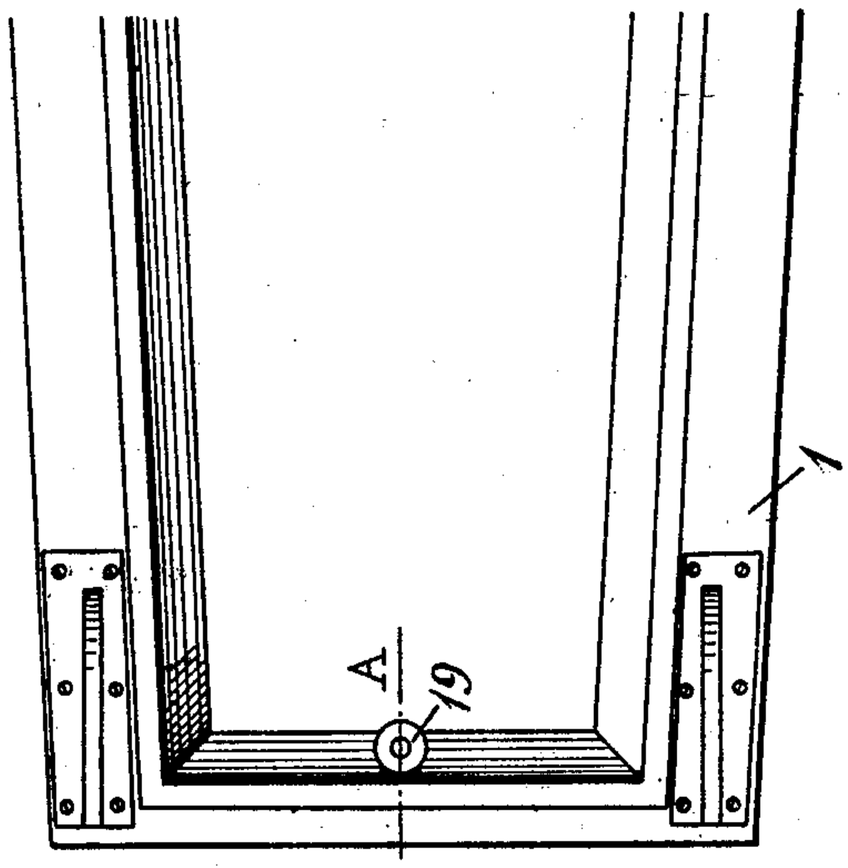


Fig. 1.



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3 SHEETS—SHEET 2.

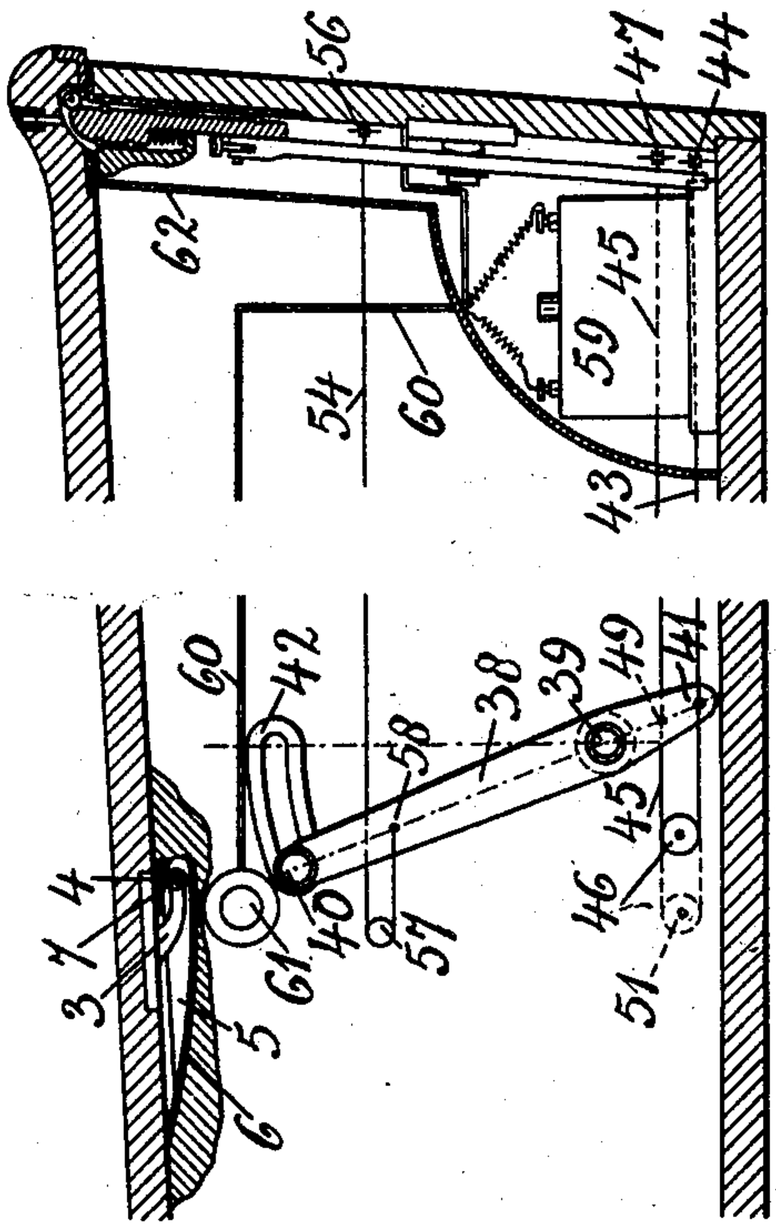
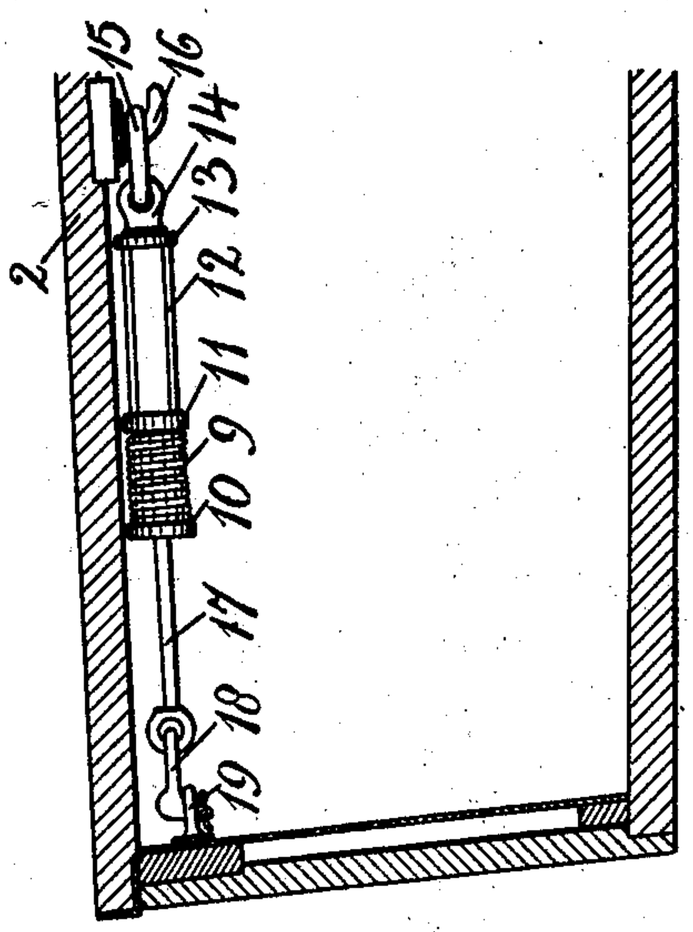


FIG. 2.



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3 SHEETS—SHEET 3.

Fig. 4.

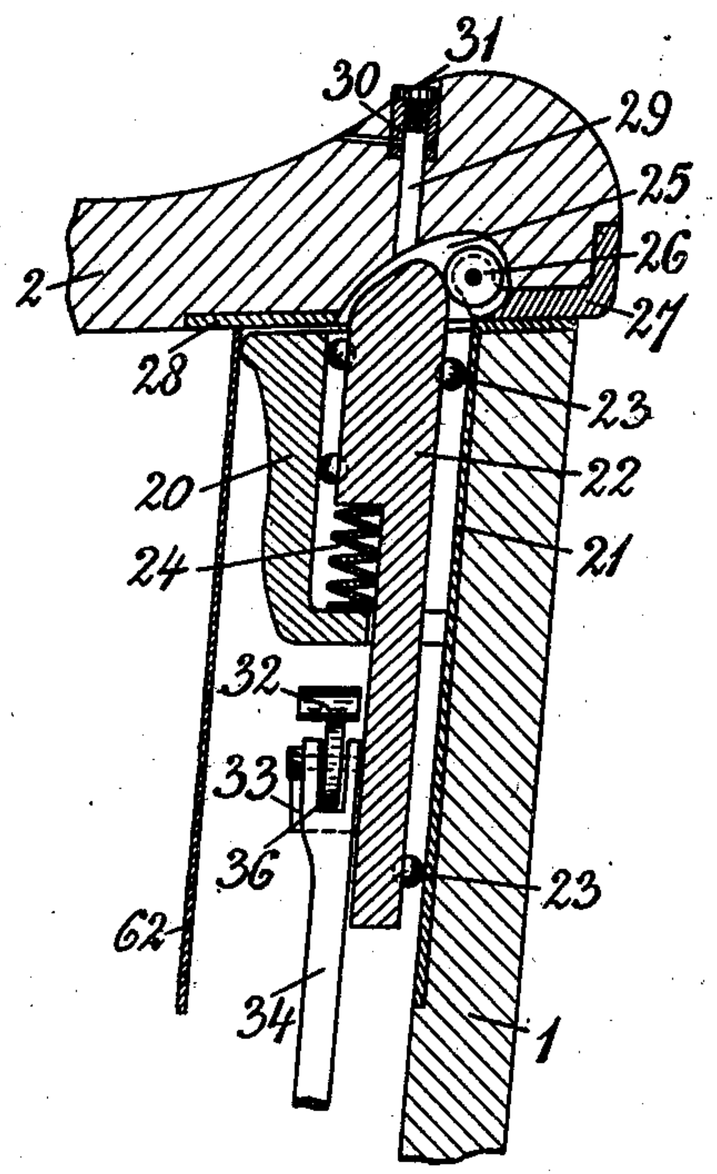
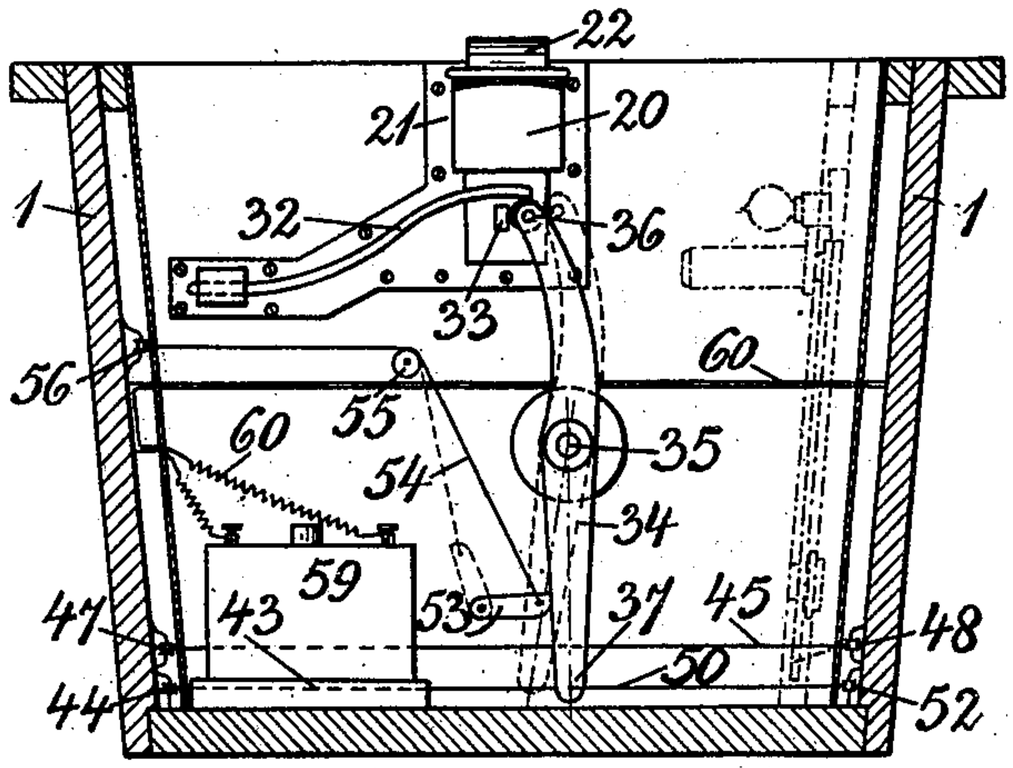


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SAFETY-COFFIN.

No. 898,021. Specification of Letters Patent. Patented Sept. 8, 1908.

Application filed January 29, 1907. Serial No. 354,614.

To all whom it may concern:

Be it known that I, JOHAN JACOB TOOLEN, architect, a subject of the Queen of the Netherlands, residing at 21 Balistraat, The Hague, Kingdom of the Netherlands, have invented certain new and useful Improvements in Safety-Coffins, of which the following is a specification.

This invention relates to an improved safety coffin which has been designed for the purpose of enabling persons who are only apparently dead and have been prematurely buried to be readily rescued and also for the purpose of enabling such persons to get out of the coffin.

As is well known a great number of contrivances have been heretofore devised for the purpose of saving the lives of those who have been buried when only apparently dead and these contrivances, as a rule, are distinguished either by electric arrangements for giving signals and for conducting fresh air to the apparently dead person when he awakens; or by arrangements for making such signals mechanically such as for example, by the breaking of panes of glass. Contrivances having slides which are to be pushed back by the person apparently dead and which will admit light and air to him are also known. All these arrangements, however, offer no guarantee of help being given in time, and the person awakening has no opportunity of getting out of the coffin.

This invention is distinguished from the already known arrangements by the fact that an opportunity is afforded the apparently dead person, when he awakens, of opening the coffin automatically, with very slight exertion on his part, so that he can immediately obtain a supply of fresh air and may afterwards leave the coffin; while his liberation can be further facilitated by the aid of the already known contrivances, such as electric bells and the like.

The present invention is characterized by the special arrangement of the coffin lid, which is fitted so that it will slide and is normally held fast by a bolt while the coffin remains closed. The contrivance is further so arranged that a strong spiral spring, fitted on the lid and at the foot of the coffin, constantly tends to push the lid aside even while it is held fast by the bolt. Two movable levers with handles are also fitted in the inside of the coffin, close by the hands of the person and are connected with the closing bolt by means of a special arrangement in such manner that a slight displacement of the levers above mentioned immediately operates the bolt whereupon the coffin lid is opened by the action of the spring. Close by the handles of the levers already mentioned incandescent lamps are fitted, their purpose being to direct the attention of the apparently dead person, when he awakens, to the two lever handles in question.

On the drawings annexed I have shown, by way of example, one method of carrying out the invention.

Figure 1 is a plan view of the new coffin the lid being removed. Fig. 2 is a longitudinal section taken on the line A,—B, Fig. 1 the lid being shown in position. Fig. 3 is a cross section taken on the line C—D Fig. 1, and Fig. 4 shows the arrangements of lid-locking means drawn to an enlarged scale.

The coffin 1 is made in the usual way. It has the section of a trapezium and is tapered toward the inside. Two ledges are fitted along the longer sides to afford a better support for the lid 2. On the lid, 2, there are six fastenings, arranged in three sets of opposite pairs, and each arranged to fit, in the manner hereinafter described, within a groove of the coffin. One of said fastenings (given as an example only) is shown in Fig. 2, and consists of a bent arm 3, the end of which may advantageously be fitted with a guide pulley 4. Opposite this fastening on the coffin, an arrangement is provided to effectively close the lid 2. In its essentials this arrangement consists of a groove 5 which runs with a slight inclination to the inside and has a metal casing 6. Towards the head of the coffin the groove is turned upwards and over it a fixed knob or nose 7 partially projects, said knob or nose being of a parabolic form. The whole of the groove 5 is closed on top by means of a protecting-plate 8 having a longitudinal slit therein for the passage of arm 3. In the embodiment of the invention shown on the drawing, this protecting plate is fitted over the side ledges of the coffin. It will be seen that there is only a long narrow slit left to serve as a guide for the bent arm 3, so that, if the lid 2 be pushed from the foot to the head when closing the coffin, the guide pulley 4 will slide over the metal casing 6 until the pulley

in question is caught fast between the knob or nose 7 and the metal casing. In this way a proper closure is effected.

As already mentioned an arrangement is fitted to the coffin lid to enable it to slide back rapidly and easily and essentially this arrangement consists of a spiral spring 9 which is placed so that it will move between two disks 10 and 11. The disk 10 has fitted to it two guide rods 12. These rods pass through corresponding spacious openings in the disk 11 and are suitably attached to a head 13. This head is secured by means of the eye-piece 14 and the ring 15 to a projection or nose 16 fitted on the lid 2. To the disk 11 there is attached a draw-rod 17, the end of which may be formed into a ring with an eye-hole and this draw-rod is firmly connected to the foot of the coffin by means of the draw-hook 18 and the eye-piece 19.

It will be seen that, in the position shown on the drawing, the spring 9 is compressed and will naturally pull the lid 2 towards the foot of the coffin, the disk 11 acting as a fixed wall, by means of its connection to the draw-rod 17, draw-hook 18 and eye-piece 19 to the foot plate of the coffin, and the disk 10 acting as a movable wall, by means of its movable arrangement along the draw-rod 17, and the sliding of its guide-rod through the holes in the disk 11, and tending to move apart one from the other. When the spring 9 is relieved the disk 11 remains in its original position while the disk 10 is forced by the pressure of the spring to move away from the disk 11, and thereby cause the lid 2 to slide towards the foot of the coffin with the aid of the rods 12, the head 13, the eye-piece 14, and the ring 15.

The arrangement for locking the lid 2 in place is shown clearly at Fig. 4. At the head of the coffin the locking bolt 22 is movably fitted in the bolt-casing 20 which is united to the coffin by means of a plate 21. In order to reduce considerably the resistance due to friction, balls 23 are applied. A spring 24, fitted in the casing 20, exercises a constant upward pressure on the bolt 22. The lid 2 is made with a hollowed out part 25 to receive the head of the bolt and in this hollowed out part there is placed a guide pulley 26 which is attached to the coffin lid by means of the angle-piece 27. To secure better guidance of the lid, a further metal plate 28 is fitted on the lower surface of the lid. Opposite the locking bolt 22 a hole 29 is bored in the lid, and this hole can be closed by means of the plug 30 and the screw 31. The rotation of the screw 31, will advance a pin when placed in the bore 29, to force the locking bolt downwardly, thus permitting a person outside of the coffin to unlock the lid when desired for any reason. The plug 30 can be secured against turning in the hole by means of a pin or the like. The arrangement for forcing the locking bolt 22 down quickly has as its essential characteristic the application of a strong tension spring 32, which is preferably in the form of a plate spring and is suitably secured in the plate 21, (see Fig. 3). Opposite this spring there is fitted on the bolt 22 a projection 33.

As will be seen from Fig. 3 the spring 32 is held in tension at a suitable height by means of a slightly bent lever 34, which, in the embodiment shown in the drawing, is secured so that it will turn about the pin 35. At the point where it comes into contact with the tension spring 32 it is fitted with a pulley 36. At the lower end of the lever 34 there is a hole 37.

The mechanism for effecting the movement of the lever 34 is arranged as follows: As already mentioned on the two sides of the coffin there are two movable levers with handles. Each of the two levers 38 is arranged to turn about a pin 39, and, as shown in Fig. 2, each lever has fitted to it, at its upper end a handle 40 while the lever 38, at the left hand side of Fig. 1 (see Fig. 2), is provided, at its lower end, with a hole 41, and the lever 38 at the right hand side of Fig. 3 is provided at its lower end with a hole 49, the position of which is indicated in Fig. 2. The upper end of each of the levers 38 works in a connecting link 42, and on the drawing the amount of radial movement of the lever is indicated by the dotted lines. In the hole 41 in the left hand lever 38 there is fastened a steel wire 43, which leads therefrom over the guide pulley 44 to the hole 37 in the lever 34, (see Fig. 3) and at that point it is firmly connected to the said lever. In this hole 41, in the lever, is connected another steel wire 45, which is led (in the opposite direction to the wire 43) and is turned upwards over pulley 46, and led over the guide pulley 47 and 48 to the right hand lever 38. The wire 45 is firmly attached in the hole 49 in the right hand lever. Finally the said right hand lever 38 is connected with the tension lever 34 by means of a second steel wire 50, passing downwardly around the pulley 51 and around the pulley 52.

From the arrangement of the steel wires and guide pulleys above described it will be seen that the levers are necessarily connected with one another in such a way that the lever 34 must be thrown over if either one or other of the two levers 38 be moved.

In order to prevent unintentional opening of the lid when the coffin is being carried there is still another contrivance attached to the apparatus, by means of which the locking bolt is retained in position and any improper unlocking of the same is prevented. This contrivance is arranged as follows:—At the head of the coffin there is fitted a catch 53, which is rotatable, and in the position shown in the drawing it lies with its rounded edge

against the lever 34 and accordingly prevents any lateral movement of said lever. A steel wire 54 one end of which is suitably secured to the catch 53 is led over the pulley 55, the guide pulley 56 and the pulley 57 and is secured at its other end to the lever 38 at the point 58. The arrangement is such that, should the lever 38 be pulled over, the catch 53 is partially rotated (also shown by dotted lines in Fig. 3) clear of the lever 34 so that the latter can move freely out to the left and thereby release the locking bolt 22. The catch 53, constitutes a means for preventing the releasing device being operated except by occupant of the coffin.

The illuminating device may be arranged in any suitable and well known manner and may consist of a battery 59 which is placed at the head of the coffin. Through the conducting wires 60 current is supplied to the incandescent lamps 61 which are fitted on both sides of the interior of the coffin above the handles 40 of the draw levers 38.

The locking arrangement for the lid, the mechanism for releasing the locking bolt, and the battery are best fitted behind a suitable cover plate 62. The other mechanism is also suitably inclosed in a casing so that in the inside of the coffin only the handles 40, the slide links 42 and the incandescent lamps 61 can be seen.

The *modus operandi* is as follows:—When the coffin is closed the lid is placed over it in such a way that the guide pulleys 4 attached to the lid lie in the grooves 5. The spring arrangement is now hooked on, the ring 15 being laid over the nose of projection 16. By the aid of a special contrivance (not shown) such as a hand wheel and a screw spindle operating a frame at the foot of the coffin, the lid 2 is pushed towards the head of the coffin, the guide pulleys 4 sliding over the metal lining 6, and the spiral spring 9 being pressed by bringing the disks 10 and 11 towards each other. The round edge of the angle-piece 27 now comes against the closing bolt 22 and the bolt is gradually forced downwards. Lastly, the pulleys 4 catch firmly between the fixed nose or knob 7 and the metal lining, while the guide pulley 26 slides over the upper edge of the bolt until the lid is firmly secured. The lid will now have assumed the position shown in Fig. 2 the bolt 22 being caused to snap into the hollow 25 by the action of the spiral spring 24. The levers 38 being previously set in their proper position, the tension lever 34 will now raise the tension spring 32, and the catch 53 being in the horizontal position the tension lever 34 will be securely held as shown in the drawing until the levers 38 are actuated.

Either before or after the coffin is closed the incandescent lamps should be put in connection with the battery. If an apparently dead person is in the coffin, and he awakes, the light of the incandescent lamps will at once draw his attention to the handles and he will endeavor to pull them. When the levers 38 are pulled the catch 53 is drawn upwards thereby releasing the tension lever 34, which will then be thrown over. This motion is effected through the steel wire 54, which is led over the pulleys 57, 56, and 55, and which draws the catch 53 into the position shown in dotted lines at Fig. 3.

The two levers 38 are connected with the tension lever 34, and with one another, by means of the wires 43, 45 and 50, in such a way that even if one only of the two levers be pulled the tension lever 34 must necessarily be thrown over and as a consequence the tension spring 32 released so that it at once pulls the bolt 22 downwards by the projection 33. When the bolt 22 is pulled downwards the compressed spiral spring 9 comes into play and as the guide pulley 26 no longer meets with any resistance the lid is set free and slides off, and the apparently dead person thus receiving air and light can leave the coffin.

By making the lid 2 with a hole 29, which, as already mentioned, is closed by the plug 30 and screw 31 it is possible to easily open the coffin if desired after it has once been closed. To do this it is simply necessary to withdraw the screw 31 and force the bolt 22 downwards by means of a suitable pin or rod.

The battery 59 which is fitted at the head of the coffin is preferably arranged to supply current for about 150 hours consumption, and that in most cases will be found sufficient.

In those cases where the coffin has been placed in a receiving-vault or a tomb, the awakened occupant of the coffin can operate an alarm device or otherwise attract the attention of others, or can open the door of said vault or tomb. Where the coffin has been buried in the ground, as in a churchyard, it is recommended that only a thin layer of dirt (sufficient to hide the same) shall be thrown upon the coffin. As the strength of the spring (9)—in practice, I have found that it slides off the lid load with a weight of more than seventy five kilograms—must be sufficient to remove the lid and the entire layer of earth thereon, it is preferable to use a draw-spring, as shown, for this purpose. Naturally there must be provided sufficient space in the grave at the foot of the coffin to permit the movement of the lid.

Having now fully described my invention what I claim and desire to secure by Letters Patent is:—

1. A safety coffin comprising, in combination, a coffin-body, a lid slidably fitting said body and one of said parts having an arm fitting a groove in the other part for securing the lid to the coffin-body, a spring exerting a constant pull upon the lid when slid to closed

position, a bolt for retaining the lid in said position, and means within the coffin-body for moving the bolt to release the lid and permit the spring aforesaid to draw the lid to open position.

2. A safety coffin comprising, in combination, a coffin-body, a lid slidably fitting said body, a spring exerting a constant pull upon the lid when slid to closed position, a movable bolt carried by the coffin-body and engaging a recess in the lid when in said position, means within the coffin-body for moving the bolt from the recess to release the lid and permit the spring aforesaid to draw the lid to open position, and levers, within the coffin-body and connected by wires, for releasing the bolt-moving means aforesaid.

3. A safety coffin comprising, in combination, a coffin-body, a lid slidably connected with said coffin-body by means which prevent the lid being raised away from the coffin-body, means exerting a constant pull upon the lid when slid to closed position, a bolt within the coffin-body for retaining the lid in said position, and means, within the coffin-body, for moving the bolt and releasing the lid.

4. A safety coffin comprising, in combination, a body, a lid which can be slid on to the body, a bolt for retaining the lid in position when slid on, a spring tending to force the bolt upwards, means for forcing the bolt downwards, a lever, wires connected to the lever, means for pulling the wires, and means for automatically drawing off the lid.

5. A safety coffin comprising, in combination, a body, a sliding lid therefor having a recess at one end, a bolt on the body and adapted to enter the recess, a spring acting on the bolt to force it upwards, a projection on the bolt, a spring capable of acting thereon, a lever, wires connected to the lever, second levers with handles connected to the wires and means for automatically drawing off the lid.

6. A safety coffin comprising, in combination, a body, a sliding lid therefor having a recess at one end, a bolt on the body and adapted to enter the recess, a spring acting on the bolt to force it upwards, a projection on the bolt, a spring capable of acting thereon, a vertical lever normally holding the last mentioned spring out of engagement, hand levers in the coffin and wires connecting the said hand levers to the said vertical lever.

7. A safety coffin, comprising, in combination, a body with sloping recesses in its sides, slotted plates over the recesses, a sliding lid, arms thereon, pulleys on the arms, a bolt for retaining the lid in position when slid on, means for releasing the bolt from the inside of the coffin, and means for automatically drawing off the lid when the bolt is released.

8. A safety coffin comprising, in combination, a body, a lid which can be slid on to the body, a bolt for retaining the lid in position when slid on, means for releasing the bolt from the inside of the coffin, and a spring device for automatically drawing off the lid.

9. A safety coffin, comprising, in combination, a body, a lid which can be slid on to the body, a bolt for retaining the lid in position when slid on, means for releasing the bolt from the inside of the coffin, a hook on the lid and a spring device attached at one end to the hook and at the other end to the coffin body so as to automatically draw off the lid.

10. A safety coffin comprising, in combination, a body, a lid which can be slid on to the body, a bolt for retaining the lid in position when slid on, means for releasing the bolt from the inside of the coffin, means for preventing the said releasing means being operated except from the inside of the coffin, and means for automatically drawing off the lid when the bolt is released.

11. A safety coffin comprising, in combination, a body, a sliding lid therefor having a recess at one end, a bolt on the body and adapted to enter the recess, a spring acting on the bolt to force it upwards, a projection on the bolt, a spring capable of acting thereon, a vertical lever normally holding the last mentioned spring out of engagement, a catch for retaining the vertical lever in position, hand levers in the coffin and wires connecting the said hand levers to the said vertical lever.

12. A safety coffin comprising, in combination, a body, a sliding lid therefor having a recess at one end, a bolt on the body and adapted to enter the recess, a spring acting on the bolt to force it upwards, a projection on the bolt, a spring capable of acting thereon, a vertical lever normally holding the last mentioned spring out of engagement, hand levers in the coffin, lamps located near the hand levers and adapted to burn a certain time in the coffin, and wires connecting the said hand levers to the said vertical lever.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHAN JACOB TOOLEN.

Witnesses:

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