May 17, 1938. J. SMOLA 2,117,518

VAULT LOWERING DEVICE

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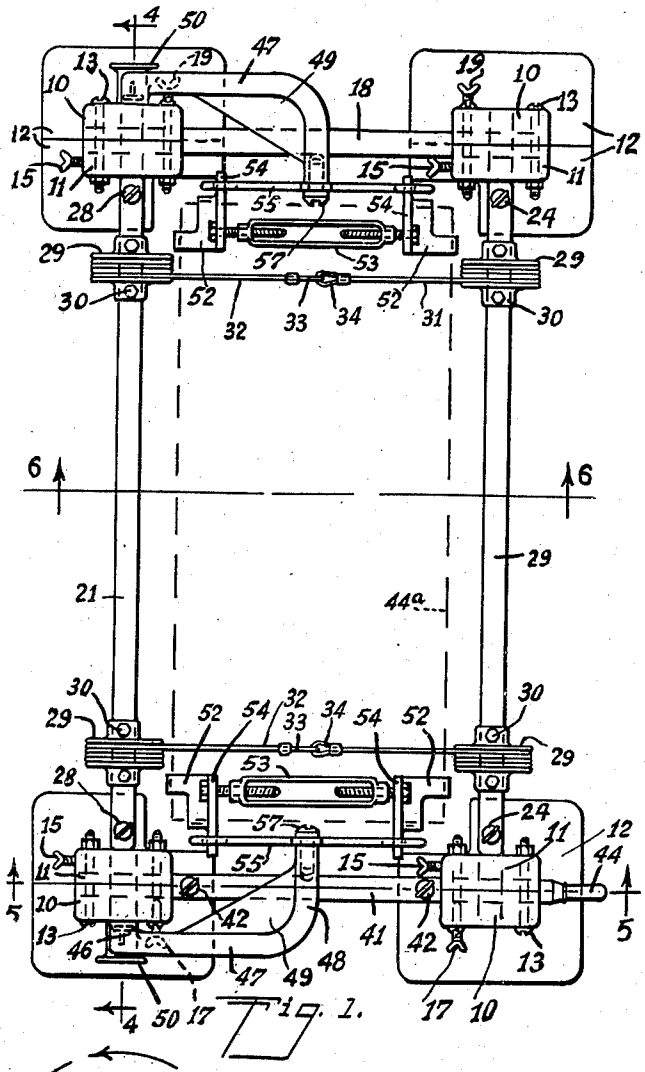


Fig. 1.

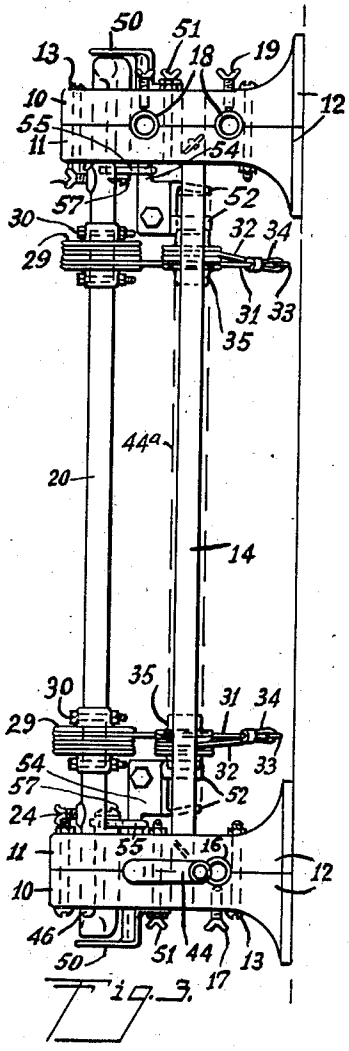


Fig. 3.

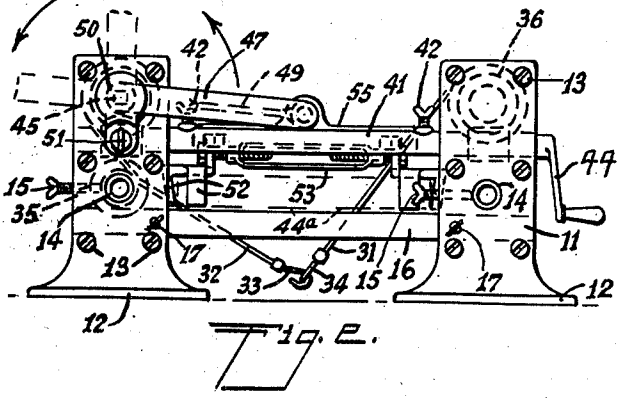


Fig. 2.

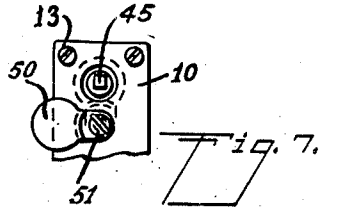


Fig. 7.

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VAULT LOWERING DEVICE

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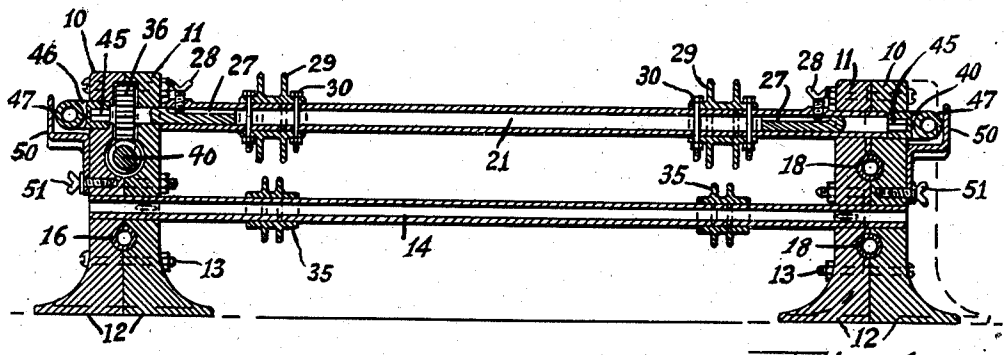


Fig. 4

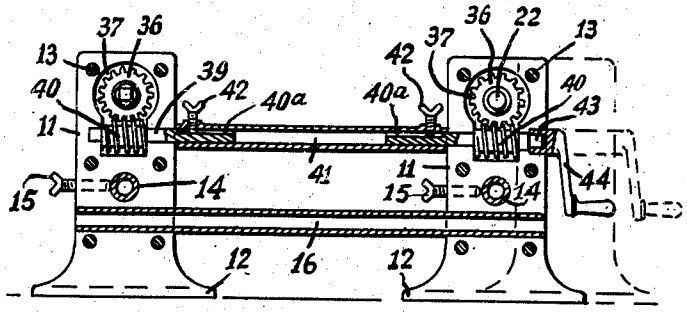


Fig. 5.

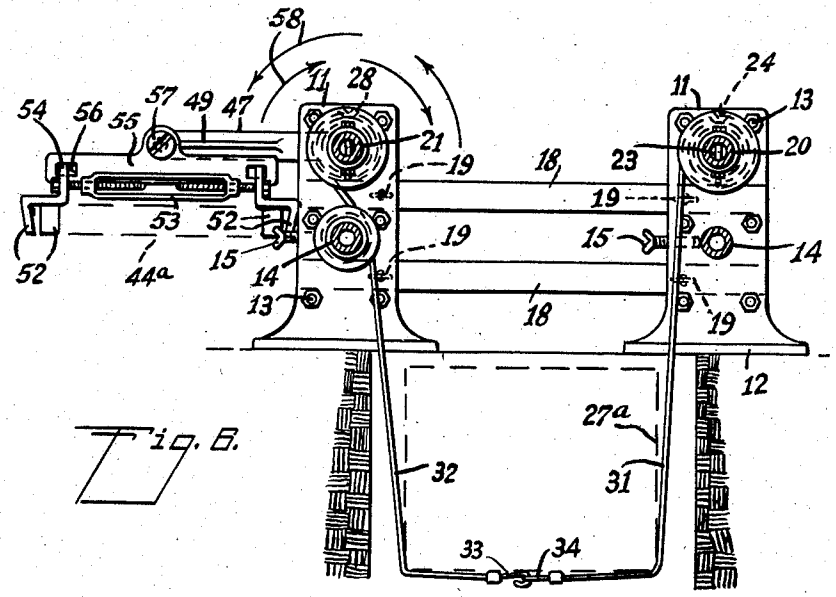


Fig. 6.

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VAULT LOWERING DEVICE

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Application August 23, 1937, Serial No. 160,495

4 Claims. (Cl. 27—32)

This invention relates generally to burial vault lowering devices for handling a vault at the grave and lowering same into the grave opening.

It is an object of my invention to provide a device of this character adapted to first partly lower the vault in the grave opening and simultaneously remove the cover therefrom and swing same to one side where it will be out of the way to permit the casket to be placed in the body of the vault.

It is another object of my invention to provide a device of this character that will replace the cover on the body of the vault in sealing association therewith.

It is a further object of my invention to provide a device of this character whereby the vault may be lowered into the grave opening after the cover has been replaced.

It is a further object of my invention to provide a device of this character that may be easily operated and that will automatically retain the vault in any desired raised or lowered position.

It is a further object to provide a device of this character that is adjustable longitudinally and laterally for grave openings of various sizes.

It is still another object of my invention to provide a device of this character that is relatively simple and sturdy in construction, that is simple to operate, and that is relatively inexpensive to manufacture.

Numerous other objects and advantages of my invention will be apparent as it is better understood from the following detailed description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

Figure 1 is a plan view of my invention.

Figure 2 is an end elevation of the device.

Figure 3 is a side elevation of same.

Figure 4 is a vertical, longitudinal section through the device taken on line 4—4 of Figure 1.

Figure 5 is a vertical transverse section through the device taken on line 5—5 of Figure 1.

Figure 6 is a vertical transverse section through the device taken on line 6—6 of Figure 1.

Figure 7 is a partial end elevation showing the cover arm securing means and the action of same.

Referring more particularly to the drawings, which illustrate a preferred embodiment of my invention, the device comprises a frame having four vertical corner stanchions. Each stanchion is of two piece construction, being split transversely and vertically through the center, the outer portion being designated by reference numeral 10 and the inner portion by reference numeral 11. The lower ends of said stanchions flare outwardly to provide enlarged bases 12 which normally rest on the ground when the device is in use and are of such size as to sustain the weight of the device as well as the weight of the vault and casket without undue sinking into the ground. Bolts 13 secure the inner and outer portions of the stanchions together. The stanchions are secured together longitudinally by longitudinal frame members 14, the ends of which are received in openings provided therefor in the respective stanchions. The longitudinal frame members 14 are adapted to slide longitudinally in their respective openings for adjusting the length of the device and are held in adjusted positions by winged set screws 15. The stanchions at the crank end of the device are secured together laterally by a lateral frame member 16, the ends of which are received in openings provided therefor in the respective stanchions below the openings for the longitudinal frame members and at right angles thereto, said frame member being secured in its respective openings by winged set screws 17.

At the opposite end of the frame the stanchions of said end are secured together laterally by vertically spaced lateral frame members 18, the respective ends of which are received in openings provided therefor in the respective stanchions. Said frame members 18 are secured in their respective openings by winged set screws 19. The lateral frame members 16 and 18 are adapted to slide in their respective openings upon release of their respective set screws to permit lateral or transverse adjustment of the frame and are held in adjusted positions by tightening of said set screws. At each side of the device are longitudinally extending hollow shafts 20 and 21 between the respective stanchions. Stub shafts 22 and 23, journaled in the stanchions adjacent the respective ends of shaft 20 extend inwardly of the respective ends of said shaft 20 and are slidable therein. Each of said shafts 22 and 23 have longitudinally flattened portions against which the inner ends of winged set screws 24 abut to hold shaft 20 against rotation on said shafts 22 and 23, the latter being rotatable in their respective stanchions. Stub shafts 25 and 26, journaled in the stanchions adjacent the respective ends of shaft 21, extend inwardly of the respective ends of said shaft 21 and are slidable therein. Each of said shafts 25 and 26 have longitudinally flattened portions 27 engageable by the inner ends of winged set screws 28 to hold shaft 21 against ro-

tation on said shafts 25 and 26, the latter being rotatable in their respective stanchions. The set screws 24 and 28, when tightened, also prevent longitudinal movement of the respective stub shafts in the shafts 20 and 21, the arrangement of the stub shafts in the shafts 20 and 21 permit adjustment of the length of the device.

Adjacent the respective ends of the shafts 20 and 21 spools 29 are secured thereon by bolts 30. The spools are provided with cables 31 and 32, the cables 31 being wound on spools on shaft 20 and cables 32 being wound on spools on shaft 21. Said cables are wound on their respective spools upon clockwise rotation thereof. The free ends of transversely opposed cables are provided with hooks 33 and eyes 34 respectively whereby the ends thereof may be releasably connected. Cables 32 are operably wound on respective idling pulleys 35 rotatably mounted on the longitudinal frame member 14 disposed beneath shaft 21.

The cables 32 are so wound on the idling pulleys that they depend on the inner side of same as shown in Figs. 2, 3 and 6, to provide uniform suspension of the vault. It will be readily apparent that the cables are so wound on the spools that when the shafts 20 and 21 are rotated, said shafts being geared to rotate in the same direction simultaneously relative to each other, the cables will be simultaneously unwound or wound, depending on the direction of rotation of the shafts. The vault, shown in dotted lines 27*a*, Fig. 6, rests on the joined cables and may be thus lowered or raised as desired. Stub shafts 22 and 25 are each provided with a gear 36 secured thereon within gear case 37 formed within the respective stanchions of the crank end of the device.

Laterally extending stub shafts 38 and 39 are journaled in the respective stanchions of the crank end of the device and have worm gears 40 secured thereon in operative mesh with the gears 36. The stub shafts 38 and 39 extend inwardly of the device in axial alignment with each other and have flattened portions 40*a*. Said shafts 38 and 39 are received in the respective ends of a hollow shaft 41 and are slidable therein. Set screws 42 adjacent the ends of shaft 41 are adapted for engagement with the flattened portions 40 for holding the respective shafts 38 and 39 against rotation in shaft 41 as well as against sliding movement longitudinally therein. Stub shaft 39 is provided with a square end 43 adapted to be removably received in the socket of a crank 44, said square end extending outwardly relative to the crank side of the device. Upon turning of the crank worm gears 40 are simultaneously turned or rotated and drive the respective gears 36 thereby rotating shafts 20 and 21 for raising or lowering a vault resting on the cables of the device, said shafts being adapted to turn simultaneously in the same direction.

The longitudinally outer ends of stub shafts 25 and 26 are provided with longitudinally extending square ends 45 adapted for operative reception in inwardly extending sockets 46 of cover arms 47 which extend at right angles to the axis of said shafts 25 and 26.

The cover arms 47 are adapted to swing on the same axis as that of the shafts 25 and 26 and are provided with inturned portions 48, said arms having integral webs 49 for strengthening and bracing same. The arms 47, when attached to their respective shafts are retained in operative position by angular plates 50 adapted to normally swing on respective winged screws 51, the latter being tightened for retaining the plates in desired positions.

Jaw members 52, adapted to grasp the respective ends and adjacent sides of the vault cover, shown in dotted lines 44*a* of Figure 1, are drawn together clampingly by turnbuckles 53. The jaw members at each end of the device are provided with upturned flanges 54 by means of which the respective turnbuckles 53 are operatively associated therewith, said upturned flanges are also adapted to link with respective cross-arms 55, the slots 56 of said cross-arms permitting a limited movement of the transversely opposite jaw members toward and from each other during clamping of said jaw members to the cover of the vault. The cross-arms 55 are swingingly secured to the respective inner ends of the inturned portions 48 of cover arms 47 by means of bolts 57 screwed into said ends.

In use the device is placed about the open top of a grave opening and the vault placed on the cables which pass beneath same adjacent the ends thereof. With the cover arms attached so they extend intermediately between the respective end stanchions the jaw-members are clamped to the corners of the cover of the vault, as shown in Figure 1. Turning of the crank in the proper direction will lower the vault and simultaneously cause the cover arms to swing upwardly and outwardly and downwardly as indicated by arrows 58 in Figure 6 thereby carrying the cover out of the way to permit placing of the casket in the partly lowered vault which has moved to substantially the position shown in Figure 6 with its upper edge in approximately the same plane as the top of the grave opening. The worm gear arrangement of the device automatically holds the vault in any desired position thus eliminating accidental slippage.

After the casket has been placed in the vault the crank is turned in the opposite direction thereby raising the vault and simultaneously returning the cover onto same. Vaults of this character usually have a tongue and groove arrangement, the latter being partly filled with a suitable sealing material so that upon the return of the cover to the body of the vault same will be hermetically sealed.

The jaws are now released from the cover and the cover arms removed from their respective shafts after plates 50 have been swung out of association with said arms. The vault is then lowered into the opening by suitable turning of the crank and when said vault rests on the bottom of the grave opening the cables are pulled longitudinally outward, relative to the vault, until they become free and can be raised.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description and it will be apparent that various changes may be made in the form, construction, and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

Having thus described my invention what I claim is:

1. In a device of the class described, a frame comprising upright corner stanchions adjustably secured together by longitudinal and transverse frame members respectively, a pair of longitudinally extending rotatable vault supporting shafts associated with respective stanchions, said shafts being in substantially the same horizontal planes

and spaced laterally apart in parallel relationship, a gear operatively connected to each shaft at one end of the device, a worm gear operatively associated with each first mentioned gear, means connecting said worm gears for simultaneous operation to rotate the vault supporting shafts simultaneously in the same direction, said connecting means being transversely adjustable relative to the frame, a crank for operating the worm gears, spools secured to the shafts adjacent the ends thereof, transverse cables windable on the respective spools at the respective ends of the shafts, said cables being similarly wound on the spools, the cables for one shaft depending on the inner side thereof and the cables for the other shaft depending on the outer side thereof, the latter cables being received on idler pulleys operatively mounted to the frame beneath the respective spools of the adjacent shaft, said cables depending on the inner sides of the idler pulleys, a removable cover swinging arm operatively associated with each end of the shaft having the cables depending on the outer side thereof, said arms being adapted to swing on the same axis as that of said shaft for swinging a vault cover outwardly of the frame and swinging same back onto a vault supported on the cables upon suitable rotation of the shafts, means associated with the arms for clamping engagement with a vault cover, and releasable means for retaining the arms in operative association with the shaft.

2. In a device of the class described, a frame comprising upright corner stanchions secured together by longitudinal and transverse frame members, a pair of longitudinally extending rotatable vault supporting shafts operatively associated with respective stanchions, the axes of said shafts being in substantially the same horizontal plane and said shafts being laterally spaced apart in parallel relationship, a gear operatively secured to each shaft adjacent the ends thereof, said gears being at the same end of the device, a worm gear operatively associated with each first mentioned gear, means for simultaneously operating the worm gears to rotate the vault supporting shafts simultaneously in the same direction, spools secured on the shafts adjacent the ends thereof, transverse cables between the spools of the respective ends and similarly wound on said spools, the cables of one shaft depending on the inner side thereof and the cables of the other shaft depending on the outer side thereof, idler pulleys operatively disposed beneath the spools of the last mentioned shaft on which the cables thereof are operatively associated to depend on the inner side of said idler pulleys, a removable cover swinging arm operatively associated with each end of the shaft having the outwardly depending cables, said arms being adapted to swing on the same axis as said shaft and to swing a vault cover outwardly of the frame and swing same back onto a vault supported on the cables upon suitable rotation of the vault supporting shafts, means associated with the arms for clamping engagement with a vault cover, and releasable means for retaining the arms in operative association with the shaft.

3. In a device of the class described, a supporting frame, means for supportably moving a vault vertically, means for clampingly engaging the cover of the vault, swinging means associated with the clamping means adapted to swing the cover outwardly of the frame simultaneously upon initial lowering of the vault a limited distance and for simultaneously returning the cover onto the vault upon returning movement of the vault to its upper position, means for automatically holding the vault and cover swinging means in desired positions, and means for disconnecting the cover swinging means.

4. In a device of the class described, a supporting frame, means for supportably moving a vault vertically, cover lifting and swinging means adapted for engagement with the vault cover for lifting said cover and swinging same outwardly of the frame and for returning said cover onto the vault, and means for disconnecting the cover swinging means from operative association with the device.

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