July 16, 1935. C. W. GOODSMAN 2,008,445

CONVEYING DEVICE

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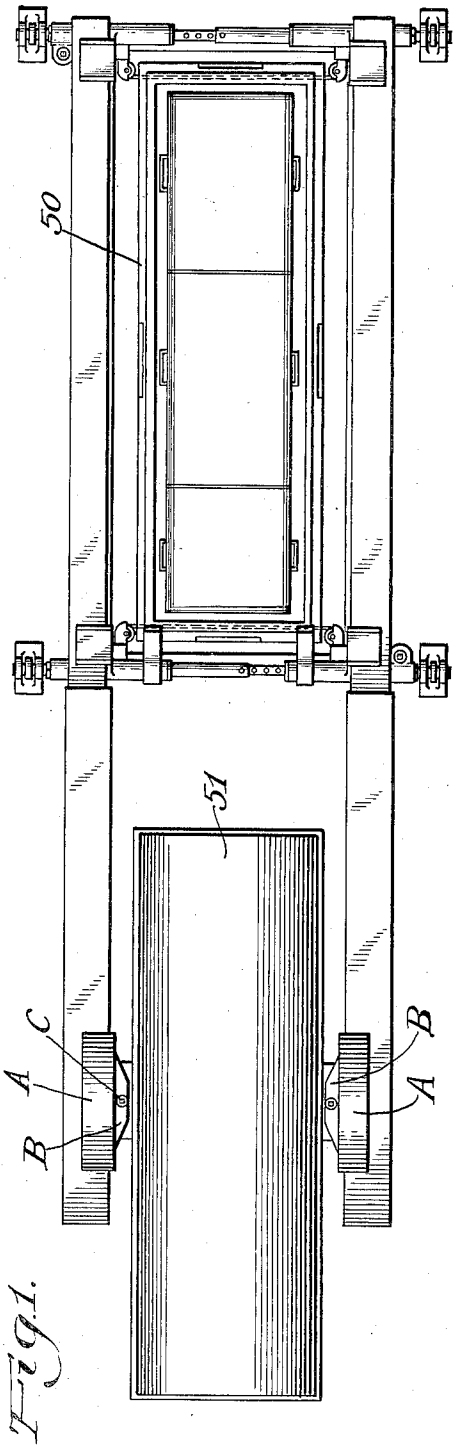


Fig. 1.

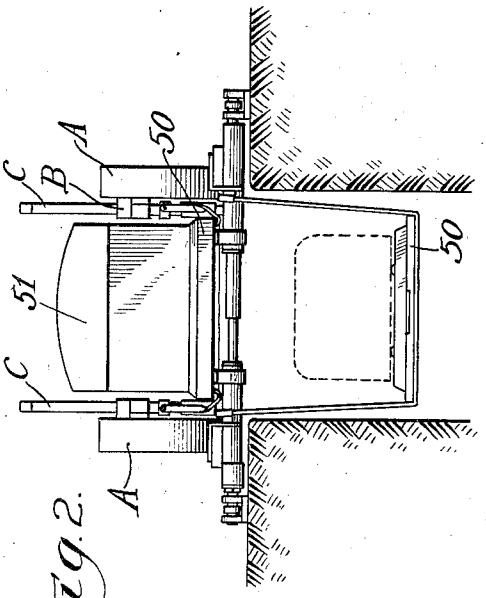


Fig. 2.

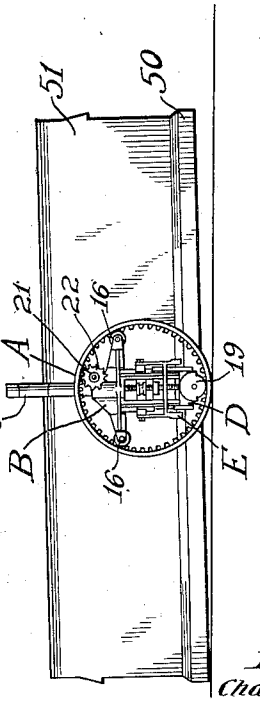


Fig. 3.

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Fig. 4.

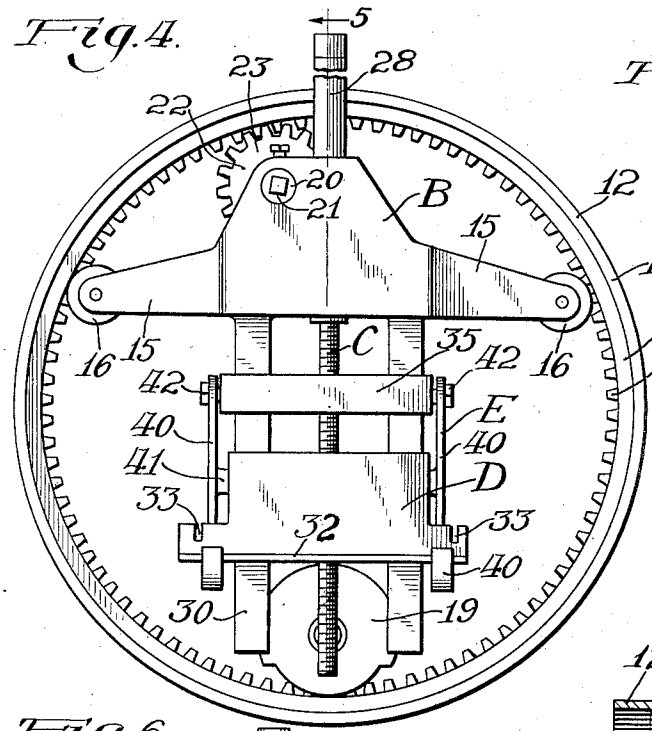


Fig. 5.

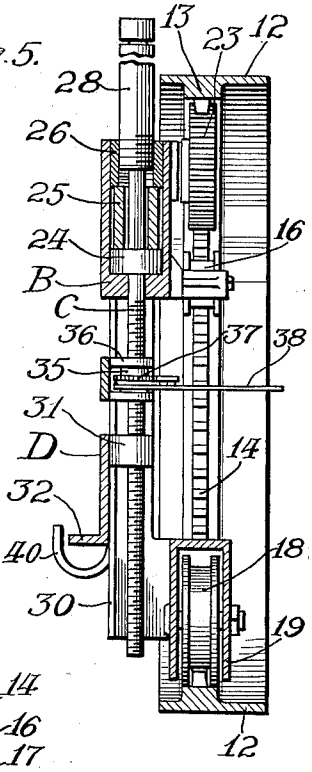


Fig. 6.

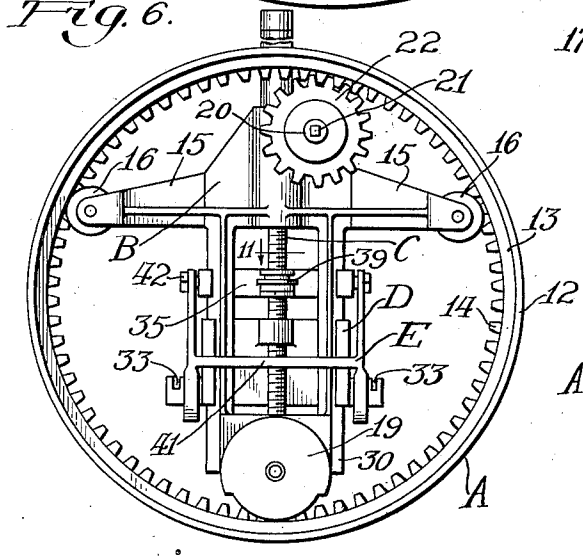
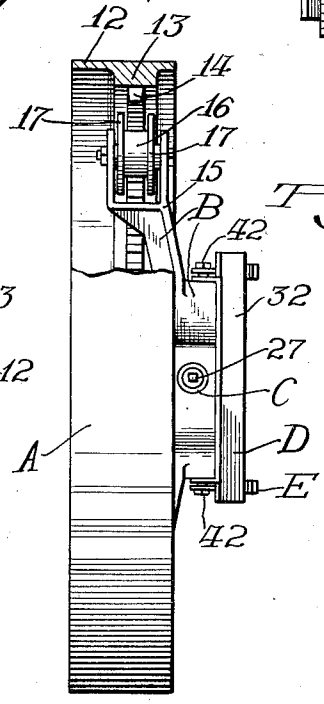


Fig. 7.



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Fig. 8.

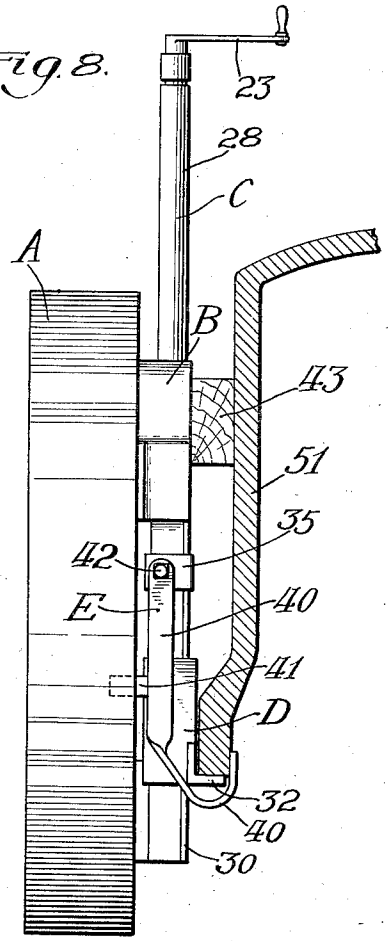
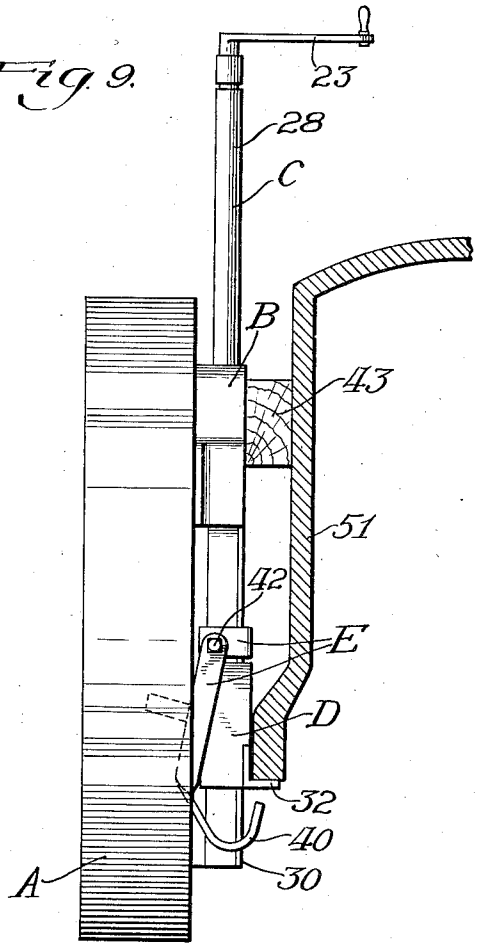


Fig. 9.



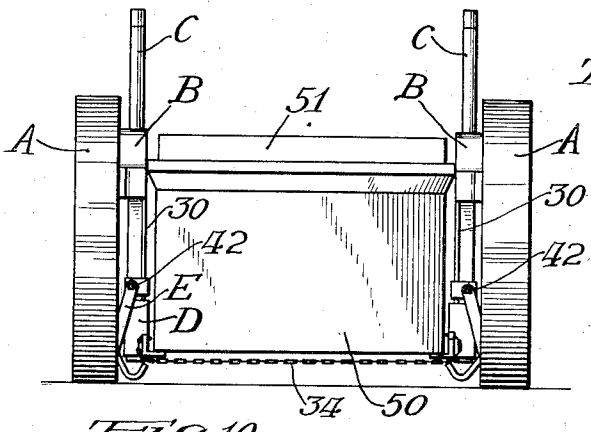
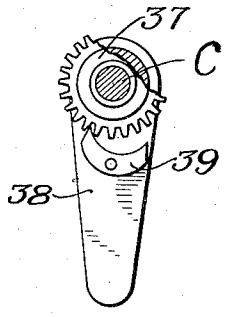


Fig. 10.

Fig. 11.



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UNITED STATES PATENT OFFICE

2,008,445

CONVEYING DEVICE

Charles W. Goodsman, Portland, Oreg., assignor to Frigid Fluid Company, Chicago, Ill., a corporation of Illinois

Original application November 19, 1932, Serial No. 643,455. Divided and this application May 10, 1934, Serial No. 724,996

10 Claims. (Cl. 254—7)

This invention relates to conveying devices adapted particularly for use in transporting heavy articles, such as concrete burial vaults, tombstones, and the like.

The primary object of the invention is to provide a device, light in weight, which may grip the article to be moved, raise it, and facilitate propelling it to the desired location.

A further object of the invention is to provide a mechanism which will enable a casket to be interred within a burial vault in a novel and simple manner.

The present application is a division of my application, Serial No. 643,455, filed November 19, 1932, relating to a Burial vault lowering device.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Figure 1 is a plan view of the improved apparatus carrying a burial vault, the mechanism at the right showing a lowering device of the character described in my parent application, on which is supported the base member of a vault on which has been placed a casket; Fig. 2 is an end elevational view of a grave over which the lowering device and conveying mechanism have been positioned to lower the top portion of the vault into position; Fig. 3 is a side elevational view of one of the conveying devices in engagement with a burial vault; Fig. 4 is a broken side elevational view of one of the conveying devices; Fig. 5 is a vertical sectional view taken as indicated at line 5 of Fig. 4; Fig. 6 is a view similar to Fig. 4, but taken from the opposite side; Fig. 7 is a broken top plan view of the device; Fig. 8 is a front elevational view showing one of the conveying wheels in gripping engagement with a vault cover; Fig. 9 is a view similar to Fig. 8, but showing the gripper in released position; Fig. 10 is a front elevational view of a pair of devices in engagement with a vault, showing a chain for connecting the two devices; and Fig. 11 is a broken plan view of the gripper-operating hand lever, taken as indicated at line 11 of Fig. 6.

In the embodiment illustrated, A designates a mono-wheel in which is rotatably mounted a frame B; C, a jack screw adapted to raise and lower a slide member D; and E, gripper means for attaching an article to be moved to the conveying mechanism.

As best shown in Figs. 4–6, the wheel A comprises an outer tire portion 12 and an inner flange 13 equipped with an internal gear 14.

The frame member or spider B is provided with laterally extending arms 15, in which are journaled rollers 16. Said rollers are provided with end flanges 17 which straddle the gear 14 and bear against the flange 13. A similar roller, but of larger size, 18 is journaled in the lower portion of the frame, which is shaped in the form of a housing 19. At the upper portion of the frame, a shaft 20, provided with a crank head 21, is journaled. Upon the shaft 20 is fixedly mounted a driving gear or pinion 22 which is in mesh with the internal gear 14. Thus it will be understood that by rotating the shaft 20 by means of a hand crank 23, the wheel A will be rotated relative to the frame or spider B.

As best shown in Fig. 5, the jack shaft C is also journaled in the frame B and is provided with a thrust shoulder 24 which supports the shaft in position. A spacing collar 25 may be provided and held in position by means of a threaded collar 26. The end of the shaft C has a crank head 27 which is similar in size to the crank head 21. If desired, a pipe 28 may loosely enclose the upper end of the shaft C and make threaded engagement with the collar 26.

In order to raise a vault, or similar object, by means of the jack screw, the slide member D is provided. The downwardly extending legs 30 serve as guides for the member D which makes threaded engagement with the jack shaft by means of the rigidly connected nut 31. The member D is also provided with an outwardly extending foot or ledge 32 which is adapted to engage beneath the edge of a vault. Thus it will be understood that when the shaft C is rotated, the slide member D will be raised or lowered. As shown in Figs. 4 and 10, the member D is provided with slots 33 which are adapted to receive a chain 34 extending beneath the load and holding the devices in engagement therewith.

In order to clamp the object carried on the foot 32, a gripping device E may be provided. This gripping device comprises a cross bar 35 provided with horizontal arms 36 between which a gear nut 37 is threaded to the screw shaft C. A hand lever 38 is also journaled on the jack screw and is provided with a pivotally mounted pawl member 39 which may be positioned to rotate the gear nut in either direction, to raise or lower the bar 35. A pair of downwardly extending hooks 40 are connected to each other by means of a cross bar 41 and are pivotally connected at their upper ends to the cross bar 35 by means of cap screws 42. Thus it will be understood that when it is desired to grip the edge of a vault against the conveying device, the members 40 may be swung inwardly by hand or foot pressure on the cross bar 41 and

the grippers may be raised into the position shown in Fig. 8 by rotating the gear nut 37 by means of hand lever 38. By properly positioning the pawl 39, the gear nut will or will not rotate with the screw shaft C and the grippers may be held in a desired position with respect to the frame B.

As shown in Figs. 8 and 9, it is sometimes desirable to place a block of wood 43 between the wall of the vault and the conveying device. In using the conveying device, one of the members is placed on each side of the article to be moved and after lowering the foot 32, it may be slipped under the edge of the burial vault, for example. Preferably, the devices are positioned slightly in advance of the center of the vault so that the rear portion of the box rests on the ground. One of the advantages of the present device is that the box may be moved without lifting it a substantial distance above the ground. This, in most cases, keeps the center of gravity of the load below the center of the wheel A and there is very little tendency for the box to rock about the conveying device. While not necessary, it is sometimes desirable to lay planks over soft ground or grass-covered lawns to prevent damage to the same. If it is desired to move the article over a curbing, the device may be raised the necessary distance and it will be understood that by the mechanical advantage obtained by the gearing, it is possible to transport the load over very steep grades without difficulty. One workman is required to handle each of the two wheels and to turn the device it is merely necessary to rotate one of the gears 23 faster than the other.

By using the conveying mechanism in connection with the lowering device shown in Fig. 1, a very simple method of completely assembling the vault within the grave may be followed. That is, the casket may be placed in the vault and the vault sealed before it is lowered into its final position. Usually, the vault has a base portion 50 and a box-shaped cover 51, although in some cases the base 50 is in the form of a box and a cover completes the closure. In either case, the conveying wheels may be used to position the base 50 upon the lowering device before the funeral party arrives. The pall-bearers may then place the casket on the base 50 and the two parts are lowered so that the top of the casket or base is at about the ground level. The conveying wheels may then carry the top over the base without raising the same any higher than shown in Fig. 3. At this stage, the base and casket may be raised into engagement with the member 51 by the lowering apparatus, or the top may be lowered into position by means of the jack screws C. The conveying wheels are then disconnected and the sealed vault is lowered into the grave, as will be readily understood.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

I claim:

1. A conveying device comprising: a wheel equipped with an internal gear; a spider rotatably secured within said wheel; a manually operable pinion gear journalled on said spider and meshing with said internal gear; and lifting-means mounted on said spider and adapted to hold the spider in operative upright position while carrying a load.

2. A vault-conveying device comprising: a wheel; a spider rotatably secured within said wheel; manually operable driving-means mounted on said spider; a jack screw journalled in said spider; and a slide member having a threaded connection with said screw and adapted to engage the edge of a vault and hold the spider upright while said driving-means is actuated.

3. Mechanism as specified in claim 2, including releasable gripping-means for holding the slide member in engagement with the vault.

4. Mechanism as specified in claim 2, including gripping-means for holding the slide member in engagement with the vault, said gripping-means being movable longitudinally of the screw and to and from said slide member.

5. A vault-conveying device comprising: a tractor wheel equipped with a driving gear; a frame rotatably mounted on said wheel and supported in upright position thereby; a manually operable gear journalled on said frame and in mesh with said driving gear; and vault-lifting means mounted on said frame.

6. Vault-conveying apparatus comprising: a pair of mono-wheels having individual lifting means mounted on each wheel and adapted to engage opposite edges of a vault; and independent driving-means on each of said wheels for propelling the same individually whereby the direction of movement of the vault may be controlled.

7. Mechanism as specified in claim 6, in which each of the mono-wheels is equipped with vertically adjustable means for gripping the edge of the vault.

8. Vault-conveying apparatus comprising: a pair of tractor wheels, each of the wheels having an inside track; a spider rotatably mounted within each of said wheels and having guide-means engaging said track; driving-means mounted on each of said spiders so as to drive said wheels; a jack screw journalled on each of said spiders; and a slide member threaded on each of said jack screws, said members being adapted to engage the lower edge of a vault to raise the same.

9. In a conveying device: a mono-wheel; a spider journalled in said wheel; and manually operable lifting means mounted on and supported by said spider so as to hold the spider upright when the wheel is rotated with respect thereto.

10. Vault-conveying apparatus comprising: a pair of mono-wheels; a spider journalled in each of said mono-wheels and equipped with lifting-means having a vertically movable part; and flexible means connecting the vertically movable parts of said lifting-means.

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