Feb. 27, 1945. A. D. DIRCKSEN 2,370,150

DAY AND NIGHT MESSAGE CONVEYER

Filed June 7, 1943 2 Sheets-Sheet 1

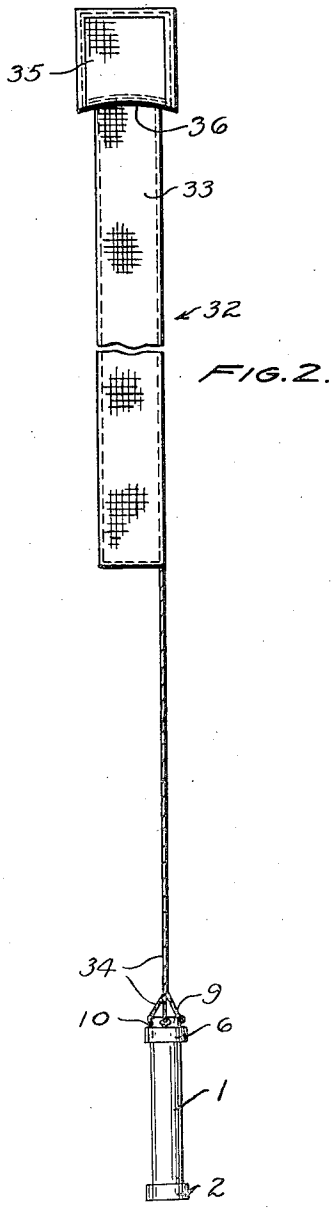


FIG. 2.

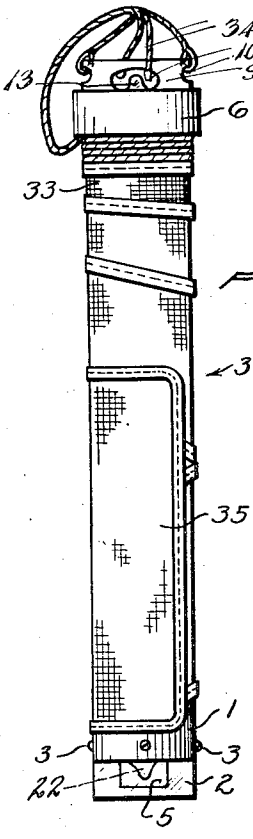


FIG. 1.

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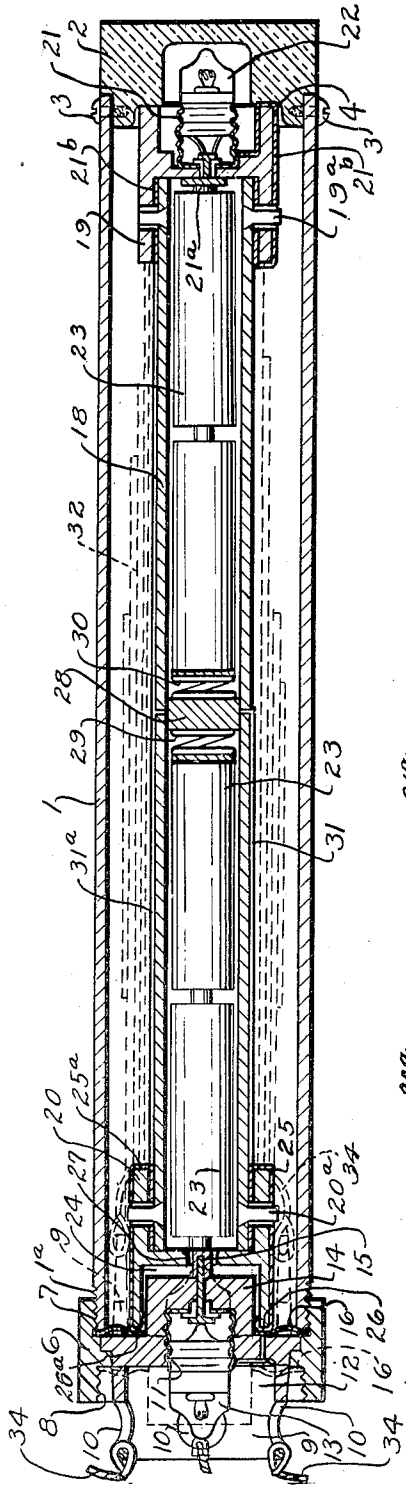


FIG. 3.

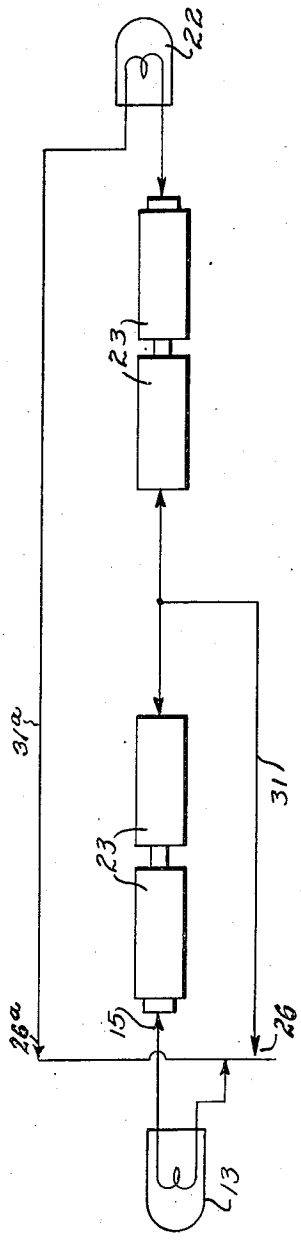


FIG. 4.

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UNITED STATES PATENT OFFICE

2,370,150

DAY AND NIGHT MESSAGE CONVEYER

Arnold D. Dircksen, Dayton, Ohio

Application June 7, 1943, Serial No. 489,957

8 Claims. (Cl. 244—138)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government, for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to improvements in message conveyers, and more particularly, to parachute attached types of conveyers for use in safely delivering messages, photographs and similar articles to the ground from an aircraft.

In my prior patent, No. 2,309,105, dated January 26, 1943, I have disclosed an illuminated message container having an inner tubular battery casing supported permanently therein at one end only, and a reversible head containing a lamp and parachute means, while the other end contains a lamp. It is difficult with this type of conveyer to place the parachute means within the conveyer when not in use, also the removal of the parachute therefrom prior to use is difficult, and in addition, it is sometimes rather difficult to insert bulky message sheets in the message space between the battery casing and the outer housing, or to remove them therefrom after delivery. When the conveyer is used in the daytime, no provision is made for removal of the battery or lamp means to provide for additional message space, and the permanent support, at one end only by the head, for the battery housing makes an expensive and complicated structure.

An object of this invention is the provision of a message container of the above-referred-to type, that is convenient to assemble for subsequent use in either day or night operations in the delivery of rollable sheet material from an aircraft to the ground.

A further object is the provision of a message conveyer having a removable inner supporting element, constituting parachute supporting means when the conveyer is not in use, and a message supporting element when the conveyer is in use.

A still further object is the provision of a message conveyer having a removable centrally disposed message supporting means adapted to support the parachute means within the conveyer when not in use, in which the removable supporting means constitutes a battery and electric lamp unit providing a source of illumination for the conveyer and parachute during night use, and in which the tubular supporting means is readily and easily removable from the conveyer to permit convenient removal of the parachute means therefrom prior to the use of the conveyer, and to provide means whereby papers containing messages, or other sheet material, such as photographs, orders, records, etc., can be conveniently wrapped around this tubular supporting means, and thereafter more easily and quickly inserted into the conveyer for delivery, and removed therefrom after delivery of the conveyer from the aircraft to the ground.

A still further object is the provision of a message conveyer having an axially arranged battery and lamp supporting unit, removably supported at both of its ends by the end closures of the conveyer, in which one of the closures is reversibly mounted on the conveyer and carries a streamer type parachute means connected to one side thereof, so arranged that the parachute means may be conveniently wrapped around the supporting unit for storage within the conveyer when not in use, with the parachute connection disposed inside of the conveyer, and contact means on the other side of the reversible closure adapted to provide circuit closing means for the battery and lamp unit only when the parachute connection thereto is positioned exteriorly of the conveyer.

A still further object is the provision of a removable battery and lamp unit for a day and night message conveyer, supported at its ends only, centrally within the conveyer, and readily removable for day use to provide additional message space within the conveyer, or conveniently insertable for night use, to provide means for wrapping a message supporting sheet thereon, in addition to means for illuminating the conveyer and parachute means during its descent.

Other objects, features, and advantages will become apparent from the following description and appended claims.

For purposes of illustrating an embodiment of my invention, reference is made to the accompanying drawings in which like reference characters refer to like parts in the several figures.

Fig. 1 is a side view showing my improved message conveyer with parachute means wrapped about the exterior thereof in condition to be dropped from an aircraft.

Fig. 2 is a somewhat diagrammatic view showing the streamer type parachute in operative position during its descent.

Fig. 3 is a longitudinal sectional view through my improved message conveyer, the parachute means and part of the shroud lines being broken away, the reversible closure for one end of the housing being shown in reversed position in dotted lines with the parachute means wrapped

about the central removable battery and lamp unit, and,

Fig. 4 is a diagrammatic view illustrating the wiring diagram.

Referring to the drawings, 1 indicates a tubular housing preferably formed of hard vulcanized fiber or plastic, and 2, a closure of transparent or semi-transparent material which is inserted into the end of the housing and secured therein by any suitable fastening means, such as screws 3. The closure 2 has the inner face thereof formed with a supporting annular recess 4 and a deeper inner concentric recess 5, the purpose of which will be later described.

The other end of the housing is threaded at 1a to receive a reversible removable closure 6 formed of clear plastic or other suitable material. The closure 6 is provided with threaded sockets 7 and 8 in its opposite faces for selective engagement with the threaded end 1a of the housing 1. One face of the closure has an annular flange 9 projecting therefrom, formed with apertures 10 for securing the shroud lines of parachute means later to be described. A lamp socket 11 is positioned in the base of the recess 12, located within by the annular projecting flange 9, for the reception of an electric light bulb 13.

The opposite side of the closure 2 has an axial projection 14 formed thereon carrying a central contact member 15 for making an electrical connection to the central pole of the electric lamp socket 11 while the threaded sleeve of said lamp socket is connected to an annular resilient metallic contact ring 16 surrounding the projection 14.

A tubuar battery and light unit indicated generally at 17 is removably mounted within the housing 1 and supported at its opposite ends only by the closures 2 and 6. This unit comprises a tubular casing 18 having cap members 19 and 20 removably secured thereon by bayonet and slot connections or other suitable fastening means, as indicated at 19a and 20a, respectively.

The cap 19 is adapted to seat in the supporting annular recess 4 of the transparent closure 2 to removably support one end of the battery and lamp unit 17 axially within the housing 1, said cap having a metallic lamp socket 21 formed therein to receive an electric light bulb as indicated at 22, with the end of the bulb extending into the inner concentric recess 5 of the closure 2.

Electrical contact means extend from the center pole of the lamp socket 21 into the end of the tubular casing 18 to engage one end of a battery unit 23 therein, while the threaded sleeve of the socket 21 is electrically connected to a metallic contact strip member 21b extending into the socket for receiving the end of the tubular casing 18. The opposite end of the tubular casing 18 is also provided with a closure cap member 20, as indicated above, recessed, as at 24, and carries a contact strip 25 leading from the recess to the end thereof, as indicated at 26, for contact with the resilient contact ring 16, carried by the reversible closure 6. The center of this cap 20, at the base of the recess 14, has an aperture 27 therethrough, to receive the contact 15 extending from the center of the projection 14.

A partition member 28 is secured in the tubular casing 18, intermediate the ends thereof, preferably formed of electrically conductive material, and resilient metallic conductor members, such as coil springs 29 and 30, are disposed in electrical contact with the opposite faces of the partition member 28 while extremities of the springs are adapted to establish electrical contact with the end or negative poles of the battery units 23 located in the tubular casing between the partition 28 and the cap members 19 and 20. A conductor 31 leads from the central partition 28 to one end of the tubular casing 18, establishing an electrical connection to the contact strip 25 in the cap 20 while a second conductor leads from the second contact strip 25a in the cap 20 to the opposite end of the tubular casing to establish an electrical connection with the contact strip 21b located in the cap 19.

Parachute means, indicated at 32, is provided for retarding the descent of the conveyer to the ground, when the same is dropped from an aircraft, said parachute means comprising a streamer 33 of fabric or other flexible material having shroud lines 34 connecting to the reversible closure 6 at two or more points, as seen in the drawings.

A pocket or envelope portion 35 is formed at the outer extremity of the streamer which has an opening 36 extending downwardly, as seen in Fig. 2, so as to be opened by the air during the downward movement of the conveyer and assist in retarding the downward speed of the device.

When the coneveyer is stored, or not in use, the parachute 32 is wrapped about the exterior of the battery and lamp unit 17, as seen in dotted lines in Fig. 3, with the reversible head disposed, as seen in dotted lines, with the annular flange 9 projecting into the end of the housing 1 so as to dispose the recess 12 interiorly of the annular flange, in supporting relation to the cap 20 to centralize that end of the lamp and battery unit within the housing 1. When the closure is in said reversed or inoperative position on the housing, the lamp 13 carried thereby is disposed in protected position within the recess 24 in the cap 20 and the contact ring 16 is placed exteriorly of the housing out of possible circuit closing contact with the ends of the contact strips 25 and 25a which establish the electrical circuit between the two lamps 13 and 22 and the batteries 23—23.

When it is desired to use the conveyer for night operations, the closure 20 is removed, thus releasing the removable battery and lamp unit 17, permitting the same to be quickly withdrawn from the housing with the parachute 32 thereon. The parachute can be conveniently unwrapped from the battery and lamp unit without any likelihood of the same being tangled or torn.

The sheets of paper, photographs or other material to be delivered can now be easily wrapped about the battery and lamp unit before the same is again placed within the housing, making it possible to easily insert a comparatively large number of message sheets into the conveyer without likelihood of tearing or delay. As the end of the cap 19 seats in the recess 4 in the transparent closure 2, the lamp 22 is disposed in the recess 5 and is fully protected from breakage by the transparent closure.

The reversible closure 6 is now screwed on the end of the housing in the position as seen in full lines in the drawings, with the exception that it is not screwed down tight. The axial projection 14 is disposed in recess 24 in the other cap member 20, with the closure 2 supporting the battery and lamp unit 17 at its opposite end axially within the housing to leave a message space the length of the conveyer between the said unit and the interior of the housing.

The central contact 15 for the lamp 13 projects through the hole 27, and is adapted to engage the central or positive pole of the adjacent battery unit 23. Since the closure 6 is not screwed on tight, the contact ring 16 is not moved into engagement with the two contact strips 25 and 25a, thus preventing the closing of the circuit from the negative conductor 31 to the lamps 13 and 22.

The parachute shroud lines 34 and the streamer may now be wrapped around the conveyer somewhat after the manner disclosed in Fig. 1, and the conveyer is ready for use. Prior to dropping the conveyer from the aircraft the closure 6 is screwed down tight, which not only seals the interior of the container against moisture, but moves the ring contact 16 into circuit closing relation with the end 26 of the contact strip 25 and the end 26a of the contact strip 25a.

Current from the negative sides of both battery units 23 will flow from the partition 29 through the conductor 31 to the contact strip 25 on the cap 20, now in contact with resilient ring contact 16 on the closure 6. Current flows from the ring 16 to the outer or shell terminal of the lamp socket 11 for the lamp 13 in the closure 6, and from the ring contact 16 through the conductor 31a to the contact strip 21b, electrically connected to the exterior of the lamp socket 21 in the cap 19 of the tubular battery and lamp unit 17.

The positive or center terminals of both of the battery units 23 contact directly with the central contact member 21a for the lamp socket 21, and the member 15 for the lamp socket 11. Both lamps are thus illuminated on independent circuits so that the damage or burning out of one of the lamps does not affect the operation of the other lamp.

The streamer 32 may be left wrapped around the conveyer as it is dropped from the aircraft, and the pressure of the air passing the conveyer during its initial descent will cause the parachute means to unwind into its operative position, where the light rays from the lamp 13 will illuminate the streamer during its descent.

The position of the light within the recess 5 in the closure member 2 permits the same to be visible over a considerable arc, the light angle being over 200°, which materially facilitates the location of the conveyer after it has reached the ground.

When the conveyer is recovered, the closure is easily removed, permitting the battery and lamp unit to be withdrawn, and the removal of the message sheets from the conveyer is very simple as compared to the removal of papers from the former known types of conveyers.

In day use, the conveyer is prepared as before, with the parachute wrapped around the housing, but the battery and lamp unit 17 is left out of the housing, thus permitting all of the space within the housing to be utilized, if desired. The use of a removable battery and lamp unit greatly facilitates the withdrawal of the parachute means from the conveyer, the subsequent insertion of the message sheets into the conveyer, and after delivery, it is very convenient, even at night, to remove the message sheets from the conveyer. In the use of my improved conveyer, fresh battery and lamp units may be prepared with the papers containing the messages or other data thereon, so that the same can be delivered to the aircraft pilots in substantially sealed condition so as to insure secrecy of the delivery of the orders to the desired destination on the ground, which operation is not possible with my former conveyer.

Having thus described my invention, I claim:

1. In a message conveyer, a tubular housing having closure means at one end formed with a support thereon, reversible closure means for the other end of said housing, having supports formed on the opposite faces thereof, a tubular supporting member removably disposed in the housing in centrally spaced relation to the interior of the housing throughout its length to leave a message between the same and the interior of the housing throughout the length of the housing, having one of its ends disposed in supporting engagement with the support of the first mentioned closure means, and the other end thereof selectively engageable with either of the supports on the reversible closure means, and parachute means for the message conveyer carried by said reversible closure means adjacent one of its supports, adapted to be disposed on the supporting member wholly within the housing when not in use.

2. In a message conveyer, a tubular housing having a transparent closure at one end thereof, a reversible closure removably disposed on the other end of said housing, a supporting member removably positioned within said housing in centrally spaced relation to the interior of the housing throughout its length to leave a message space therebetween, illuminating means carried by said removable supporting member adjacent to said transparent member including an electric lamp, a current source and an energizing circuit, contact means carried by said reversible closure on one side thereof, for energizing said circuit, and parachute means carried by the other side of said reversible closure including a streamer adapted to be wrapped about the supporting member within the housing when the reversible closure is in one position on the housing, and adapted to be wrapped around the exterior of the housing for immediate use in retarding the descent of the conveyer when dropped from an aircraft, when the closure is in its reversed position on the housing.

3. In a message conveyer, a tubular housing, an internally recessed transparent closure at one end thereof, a removable flashlight unit comprising a supporting member centrally supported in said recess within said housing in spaced relation to the interior of the housing throughout its length to leave a message space therebetween, said removable flashlight unit comprising electric illuminating means at said supported end positioned adjacent said transparent closure to be visible therethrough and including an electric battery, lamp, and circuit connections leading to the opposite end thereof, and a reversible closure for the other end of the housing having a parachute attached to one side thereof, contact means on the opposite side of said reversible closure for closing the circuit to said illuminating means and cooperating flashlight unit supporting means on both sides of said reversible closure for selectively supporting the other end of said flashlight unit centrally within said housing when said removable closure is secured on said housing in either of its reversible positions.

4. In a message conveyer, a tubular housing, and internally recessed transparent closure at one end thereof, a removable flashlight unit comprising a supporting member centrally supported in said recess within said housing in spaced re-

lation to the interior of the housing throughout its length to leave a message space therebetween, said removable flashlight unit comprising electric illuminating means at supported end positioned adjacent said transparent closure to be visible therethrough, and including an electric battery, lamp and circuit connections leading to the opposite end thereof, and a reversible closure for the other end of said housing having cooperating flashlight unit supporting means on both sides thereof for selectively supporting the other end of said flashlight unit centrally within said housing when said reversible closure is secured on the housing in either of its reversible positions, a parachute attached to one side of said reversible closure, and a second illuminating means for illuminating the parachute including an electric lamp carried by said reversible closure at the parachlute-attached side thereof, circuit closing means on the other side of said last closure including circuit connections to the last mentioned lamp, and to the contact means for closing the circuit to the first mentioned illuminating means when the reversible closure is in one position on the end of the housing.

5. A message conveyer comprising a tubular housing, a tubular member removably positioned coaxially within said housing in spaced relation throughout its length to the interior of the housing, a head closing one end of the housing having means thereon for supporting one end of the tubular member centrally with respect to the interior of the housing, a reversible head closing the other end of said housing having supporting means on opposite sides thereof for selectively supporting the other end of the tubular member centrally within the housing, and parachute means attached to said reversible head for retarding the descent of the conveyer to the ground from an aircraft, adapted to be wrapped around said removable tubular member within the housing when not in use.

6. In a day and night message conveyer, a tubular housing, transparent closure means for one end of said housing having a central supporting recess formed therein, reversible closure means for the other end of said housing having an annular recess in one face thereof and a lamp socket in said recess having a lamp therein, said reversible closure means having a supporting projection extending from the opposite face thereof, parachute means attached to the recessed face aforesaid, and circuit closing contact means on said closure adjacent the supporting projection, a removable tubular lamp and battery unit axially disposed with the housing having a lamp at one end, adapted to be seated in the recess formed in the transparent closure and a socket at the other end having circuit closing contact means thereon and adapted to be seated on the supporting projection of the reversible closure when the latter is in one position on the housing to cause engagement of said circuit closing contact means and illumination of said lamps, and adapted to be supported in the recess formed in the other face of said reversible closure when said last closure is in reversed position on the housing with the parachute means supported within the housing on said unit.

7. A day and night message conveyer comprising a housing, a reversible closure removably mounted on one end of the housing having an annular flange forming an axial recess in one face thereof, an electric lamp mounted in said recess, parachute means secured to said flange adjacent said recess, an axial projection on the opposite face of said closure, spaced circuit closing contacts on said latter face and electrical connections between said contacts and said lamp, a transparent closure for the other end of said housing having an axial recess formed in the inner face thereof, a removable tubular battery and light unit axially positioned within the housing with a lamp at one end thereof adjacent said transparent closure, said last mentioned end being removably supported in the recess in the last mentioned closure, a recess formed in the other end of said unit, contact means on said other end of the unit, and electrical conductor means between the last mentioned lamp, a battery in the unit, and said contact means whereby, when said reversible closure is disposed on the end of the housing in one position, said annular recess engages the circuit closing contact end of the tubular battery and light unit to support the same centrally within the housing with the parachute means adapted to be wrapped around said tubular unit, and when said closure is reversibly mounted on the end of said housing, to dispose said axial projection within the recess in the end of the tubular unit, to support the same centrally within the unit with the circuit closing contact on said reversible closure in contact with said contact means on the end of the tubular unit complete the circuit to said electric lamps, with the parachute in operative position exterior of said housing.

8. In a day and night message conveyer, a tubular housing, a reversible closure removably mounted on one end thereof, having supporting means on opposite faces, parachute means attached to one of said faces, and circuit closing contact means on the opposite face, a removable battery and lamp supporting unit axially positioned within the housing to leave a message space therein substantially the full length of the housing, having a lamp at one end and electrical contact means at the other end adapted to engage the said circuit closing contact means on said reversible closure, said last mentioned end of the battery and lamp unit being adapted to be selectively supported centrally within the housing by one of said supporting means with the parachute means in operative position outside of the housing, or to be supported in the other supporting means when the closure is reversed, with the parachute means within the housing, and supporting means at the other end of the housing for removably supporting the opposite end of the lamp and battery unit centrally within the housing with the lamp end thereof adjacent the end of the housing.

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