

[54] **DISPENSER CARGO SECTION**

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[51] Int. Cl. **F42b 25/16**

[58] Field of Search **102/7.2, 24 HC, 49.5, 102/2; 89/1 B**

[56] **References Cited**

UNITED STATES PATENTS

2,809,583	10/1957	Ortynsky et al.	102/7.2
3,336,868	8/1967	Rush et al.	102/24 HC
2,836,117	5/1958	Lankford	102/2

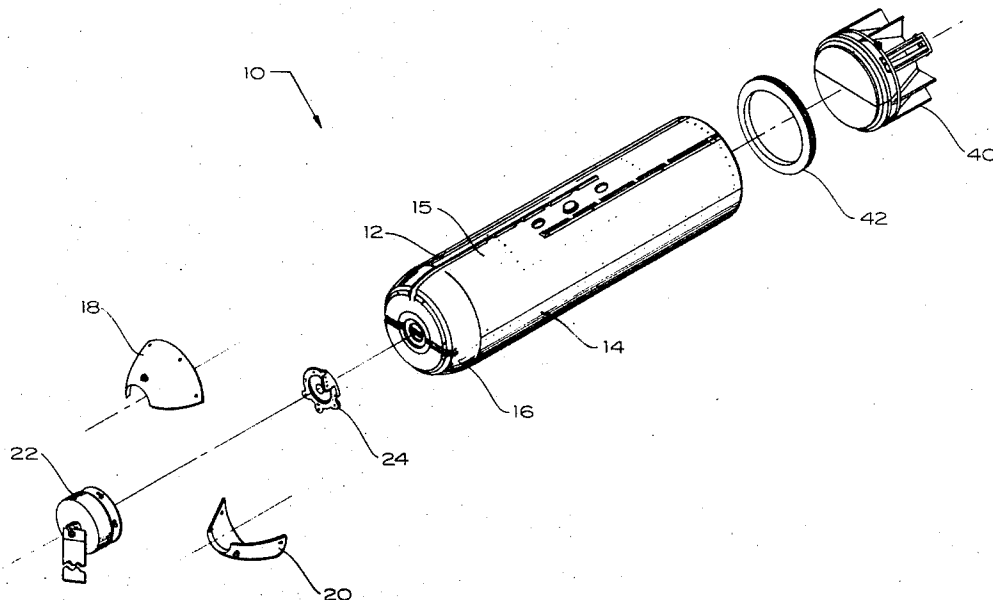
3,139,031 6/1964 Schroter et al. 102/49.5

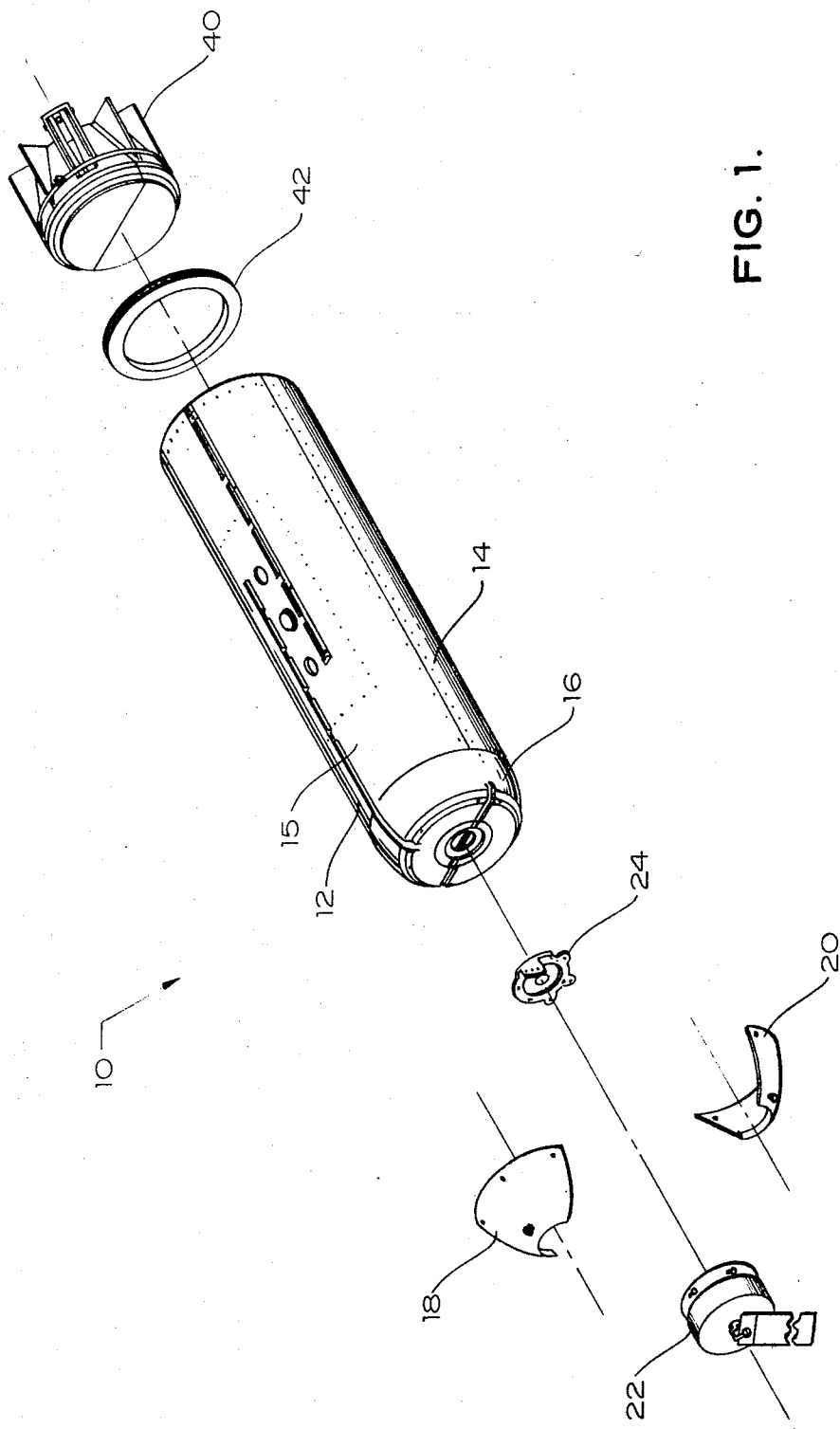
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[57] **ABSTRACT**

An aerial delivery cargo dispenser is provided for attachment to aircraft stores stations. Top and bottom half sections are welded together and fastened to a forward bulkhead and an after fairing. The top and bottom half sections are extruded with an integral longitudinal holder portion along one side designed to contain a linear shaped charge, for example. The top half also has an integral strong back portion for attachment strength and stability. The forward bulkhead is fitted with a linear shaped charge shield comparable to the housing along the two half portions and connects thereto so that a linear shaped charge may be used to cut along both side sections and through the forward bulkhead.

4 Claims, 5 Drawing Figures





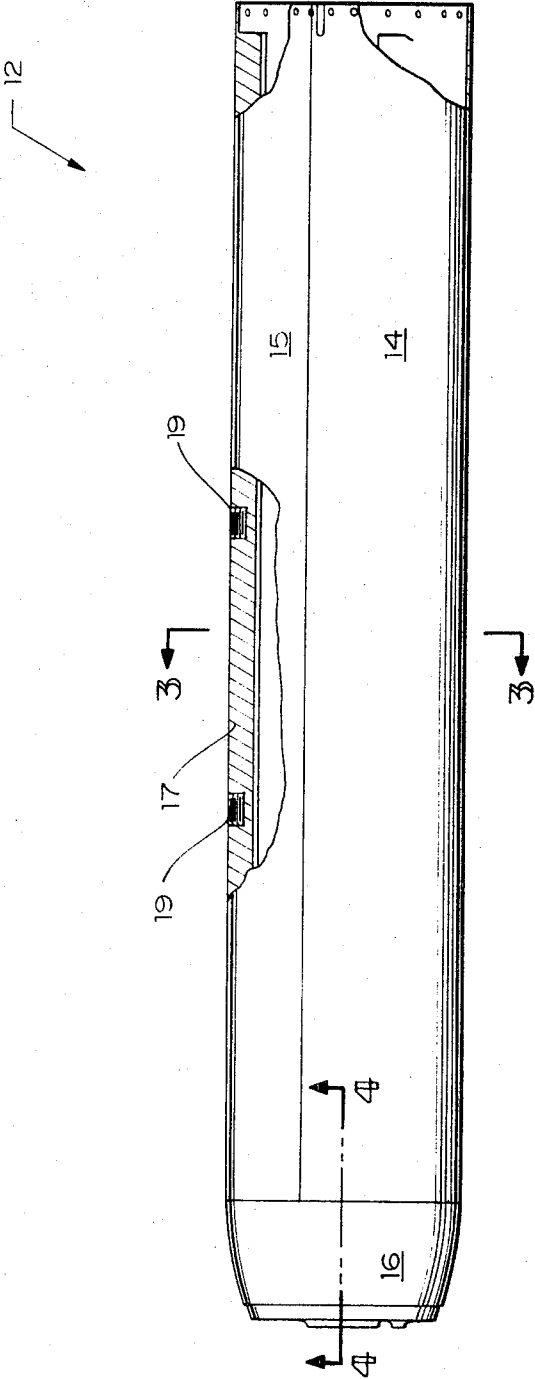


FIG. 2.

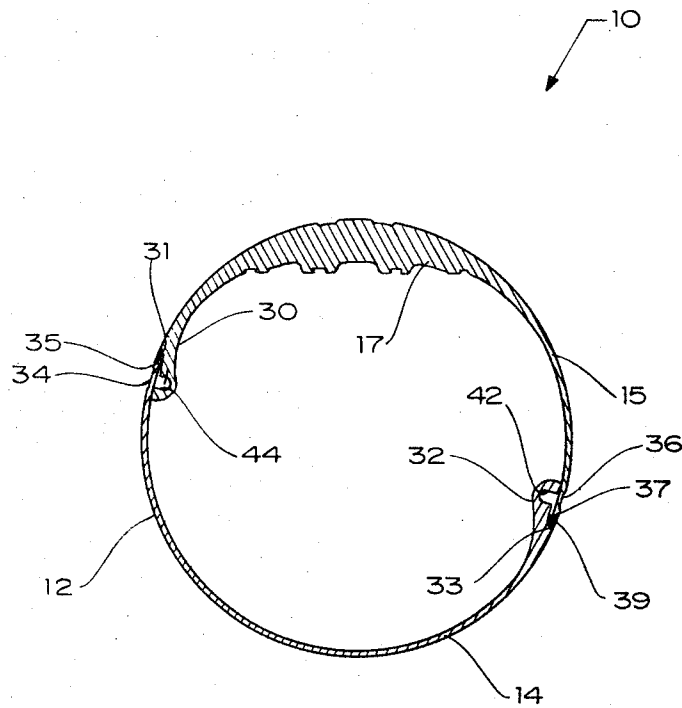


FIG. 3.

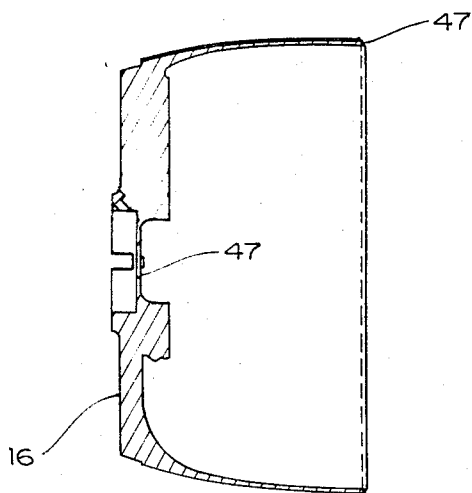


FIG. 4.

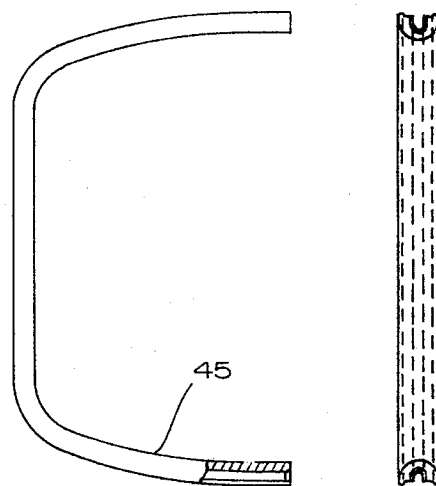


FIG. 5.

DISPENSER CARGO SECTION

BACKGROUND OF THE INVENTION

Aerial delivery devices have been manufactured and used, for example, to deliver an aerial balloon (U.S. Pat. No. 3,302,819); for fuel tanks (U.S. Pat. No. 3,469,730); and explosive devices have been used to separate portions of aerial vehicles as shown in U.S. Pat. No. 3,319,520 and U.S. Pat. No. 3,070,014.

SUMMARY OF THE INVENTION

The present invention provides an improved, inexpensive cargo dispenser which may be carried on existing cargo racks on military aircraft. The dispenser basically consists of a cargo section, a nose cone and a tail section. The cargo section comprises upper and lower extruded skin sections which may be mechanically interfitted and welded together either at the factory or in the field. A longitudinal edge on each of the sections is formed to receive a conventional linear shaped charge explosive cord. A connecting explosive cord is installed in the nose cone and when the shaped charge devices are connected to a detonating device the nose cone and the cargo skin sections may be cut apart to dispense the cargo.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIG. 1 is an exploded view of an aerial dispenser including a cargo section manufactured according to the present invention;

FIG. 2 is a side elevational view of the cargo section with portions broken away for clarity;

FIG. 3 is a cross sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a cross sectional view taken along 4—4 of FIG. 2; and

FIG. 5 is a side elevational view of a shaped charge shield useable in conjunction with the section shown in FIG. 4.

DETAILED DESCRIPTION OF THE INVENTION

The dispenser 10 shown in FIG. 1 comprises a central cargo section 12 manufactured by welding together 3 main components; an upper section 15, a lower section 14 and a forward bulkhead portion 16. The sections 14 and 15 are designed to be extruded for maximum strength at minimum cost. The semi-ogival section 16, however, is more advantageously manufactured by casting.

In preparation for flight the cargo section is fitted with a split nose cone comprising two sections 18, 20 and a tail fin assembly 40. The nose section forms an outer surface having a low aerodynamic drag and forms an inner chamber containing a conventional safe and arm device 22 which may be fastened to the bulkhead section 16 by means of adapter 24.

When the tail assembly 40 is placed on the aft end, the unit may be completely sealed with the addition of a sealing plate 42.

As shown in FIGS. 2 and 3 the upper portion 15 is extruded with a thickened portion which provides a "strongback" strengthening that portion of the cargo area which supports the weight of the carrier and its cargo. The strongback section 17 is shown drilled and tapped at 19 to provide means for attachment to an aircraft external cargo rack. Also included in the extru-

sion of each of the top and bottom sections is a thickened portion shown at 30 and 32 on one longitudinal edge and a thinned and tapered portion shown at 34, 36 along the other longitudinal edge. Each of the thickened portions 30, 32 are formed with a groove 42, 44 the purpose of which will be later discussed.

Each of the edges 34, 36 are of a curvature the radius of which is shorter than the general radius of curvature of the main portions so that when the two portions are fit together as shown in FIG. 3 there will be a tendency for the two sections to grip together. The thickened portions 30, 32 are relieved at 31, 33 and the other longitudinal edge is tapered at 35, 37 so that when the two sections are assembled a V-shaped groove will be provided for a continuous welding seam 39.

Upper and lower sections 14, 15 are also fabricated with a beveled forward edge designed to butt against a similar bevel edge on the forward bulkhead portion (see FIG. 4). Thus the portions may be easily welded together to form a unitary structure.

During assembly an explosive cord is placed in channel 42, 44 and preferably takes the form of a linear shaped charge. An arcuate shield 45 (FIG. 5) is fitted into the forward bulkhead section to form a channel for continuation of the explosive cord in that area. Shield 45 intersects the opening 47 in bulkhead section 16 and initiation of the explosive cord to part the dispenser is accomplished through hole 47 by a conventional fuze mechanism.

From the foregoing it will be seen that a cargo carrier has been designed which is easily manufactured by inexpensive manufacturing methods while maintaining desirable features of adequate strength and aerodynamic properties. The shaped charge may be safely placed during manufacture after the parts are welded. The shape and thickness of the explosive back up portions 30, 32 along with the reduced portions 34, 36 ensure that the casing will be cut along the reduced portions without backfiring into the interior of the tube when the shaped charge is fired.

I claim:

1. A dispenser for aerial delivery of cargo comprising:
 - a elongated cylindrical tube section, and
 - a frusto-ogival forward nose section;
 - said tube section consisting of upper and lower hemicylindrical portions each having a distinctive uniform cross sectional configuration allowing for fabrication by extrusion;
 - each said portion being formed with first and second longitudinal edges designed to mate in overlapping relationship with oppositely formed first and second longitudinal edges on the other said portion;
 - said lower portion having a substantially uniform wall thickness between said edges, and
 - said upper portion having a wall of non-uniform thickness between edges defining an integral longitudinal strengthening rib;
 - each said portion including a thickened wall portion along said first edges;
 - a reduced wall portion along said second edges; and
 - an outwardly opening groove in each said thickened wall portion diametrically in line with the reduced wall portion of the opposite edge;
 - said sections being fitted and welded together to form a cylinder, with two diametrically opposite, elongated

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gated, tubular channels formed by said wall portions.

2. The dispenser of claim 1 further comprising:

said second edges being of greater thickness than said first edges and having an inward stepwise contour of a dimension to receive said first edges to facilitate welding and achieve a substantially smooth cylindrical exterior in the assembly thereof.

3. The dispenser of claim 2 wherein said nose section has a base portion having an aft circular edge comensu-

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rate with the dimensions of the assembled hemicylindrical portions;

a nose portion relieved to receive a nose fairing; and said nose section being welded to the assembled hemicylindrical portions along said circular edge.

4. The dispenser of claim 3 further comprising: a fin assembly attached to and closing the aft end of said tube; and

a linear shaped charge device in each said groove.

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