June 1, 1954 LE ROY S. JESSEN 2,679,689

CORD-SEVERING PARCEL RELEASE

Filed April 24, 1952 2 Sheets-Sheet 1

FIG. 1

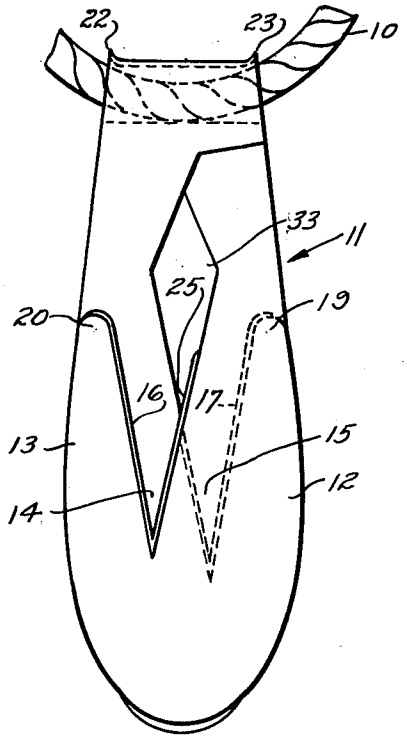


FIG. 2

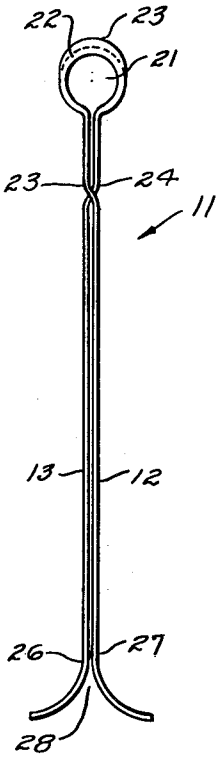


FIG. 3

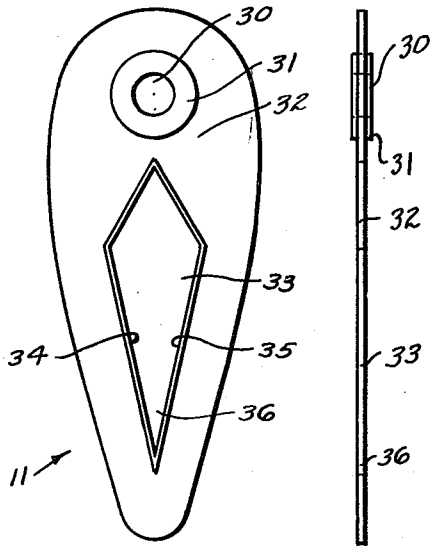


FIG. 4

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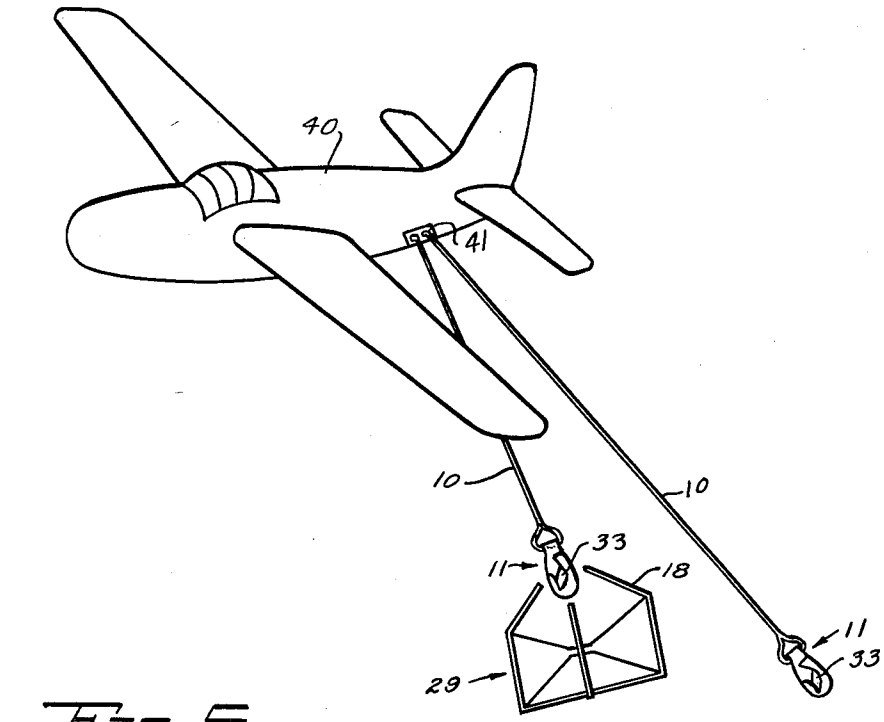
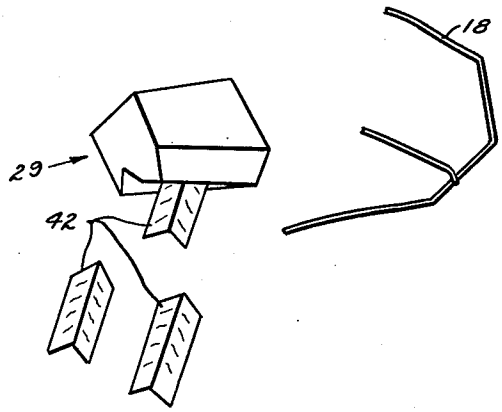


Fig. 5



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UNITED STATES PATENT OFFICE

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CORD-SEVERING PARCEL RELEASE

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Application April 24, 1952, Serial No. 284,192

6 Claims. (Cl. 30—123)

(Granted under Title 35, U. S. Code (1952), sec. 266)

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The invention described in the foregoing specification and claims 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 a cord-severing parcel release which is adapted particularly for use with airplanes, but also has general application. For airplane use, it is adapted for the release of tow targets and for the distribution of propaganda and leaflets from packages. Briefly stated, it is a hook adapted for cord accommodation and cutting upon the application of stress.

Among the objects of the invention are the provision of a release which will sever the cords of the package when the latter has been dumped from an airplane at the end of a static line.

One object of the invention is the provision of a release of this nature which is light, small and capable of repeated use.

Another object of the invention is the provision of a release which requires little maintenance, is cheap to manufacture and can be attached to the parcel in a minimum of time and if need be, under poor conditions of illumination.

It is well known that a normal knife edge will not necessarily sever a cord unless the sharp edge is moved transversely with respect to the cord. This is made apparent whenever an ordinary house knife is used to attempt to sever a cord. Therefore, a still further object of this invention is to provide a cutter for severing the cord on parcels when released from aircraft, which cutter has a wedged-shaped opening with opposing cutting edges so that upon the tow cord becoming taut the cord about the parcel will work its way toward the bottom of the opening thereby wedging itself into the cutting edges so that a scissors-like action is created thereon. In this manner the cutting edges are moved transversely of the cord so that it may be more readily severed.

Referring now to the accompanying drawings, Fig. 1 is a front elevation of the preferred form of the invention.

Fig. 2 is a side elevation of the form shown in Fig. 1.

Fig. 3 is a simplified form shown in front elevation.

Fig. 4 is a side elevation of the form shown in Fig. 3.

Fig. 5 is a perspective view of an airplane in the act of dumping parcels with the aid of the present invention. The latter is shown in exaggerated size relative to the other components of the figure.

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Referring now to Figs. 1 and 2, 10 indicates a static line which is attached to the vehicle from which the parcel is to be thrown. 11 indicates generally the cable on the parcel release which is the preferred form of the invention. The release comprises a flat piece of sheet metal, preferably of tempered steel similar to the sheet spring steel used in binder clips such as are sold in stationery stores. This steel is both thin and strong and is capable of being sharpened to a more or less permanent cutting edge. The form in which the release is made, bears a hook, either 12 or 13, upon each end, the bight 14 or 15 respectively of each has the form of an acute angle, and the sides 16 and 17 respectively of each are of substantial length on their interior edges, both of which are sharpened to a knife edge. The bight 15 is preferably made deeper than the bight 14 so that a single cutting edge will initially be presented toward the cord 18 (see Fig. 5) to be cut, rather than both of them, 16 and 17 at the same time. The tips 19 and 20 respectively of the hooks 12 and 13 are rounded and their edges are not sharp, so that the operator's hands will not be endangered during manipulation.

The middle part of the blank is narrower in width than the ends and as may be seen from Fig. 2 and is folded over to form a round channel 21 through which the static line 10 is strung. The ends 22 and 23 of the channel 21 are flared at the ends to prevent cutting of the static line 10 when the latter tightens under load. The channel is provided with a pair of shoulders 23 and 24 which may be clearly seen in Fig. 2. At this point the hooks 12 and 13 are folded over each other so that they lie together like the blades of a pair of scissors, thus promoting a shearing action of the sharpened edges 16 and 17. The point 25 at which the cutting edges meet is a relative one, depending upon the amount of dehiscence or spreading between the hooks 12 and 13. At the lower end of these hooks, their oval ends 26 and 27 are spread as shown in Fig. 2 to form a throat 28 into which the cord 18 of the parcel 29 may be introduced. This is most conveniently done by pushing the release 11 against the cord while the latter is taut, so that it may spread the hooks apart progressively from the throat 28 upward.

Referring now to Figs. 3 and 4, the modification shown therein is simplier than the form shown in Figs. 1 and 2 and for certain kinds of work may be just as efficient. It is made from an unfolded blank which has the snowshoe-like shape shown. In it the place for the attachment

of the static line 10 is an opening 30 surrounded by a grommet 31, the opening being in the widest part or top 32 of the device. While the shape shown is preferred, its outer configuration may be varied considerably. In its lower part, that form of the invention shown in Fig. 3 has a diamond shaped opening 33, the lower edges 34 and 35 of which are sharpened and come together at an acute angle, the sides being of substantial length. To use this form of the invention, the parcel cord 18 must be passed through the opening 33. The static line is passed through the opening 30 either as a loop or the end thereof may be knotted against the side opposite that through which it has been passed.

Referring now to Fig. 5, 40 is an airplane, which bears a plate 41 or other point of attachment for the static line 10, the ends of which are each provided with a release 11 such as has been described in either form thereof. The parcel, which in this case is assumed to be packed with propaganda leaflets 42, has its wrapping cords 18 passing through the openings 33 of the releases so that the cords are in contact with the cutting edges. The packages 29 are otherwise unsealed. Upon dumping the packages from the airplane, the cutting edges 16 and 17 or 34 and 35 exert their action upon the cords 18 as soon as the static line becomes taut from the weight of the package 29. Severing takes place and in the form of the invention shown in Fig. 1, the cord is first cut at the angle 14 and later, if necessary, at the angle or throat 15. The release may be temporarily deformed sufficiently by the pull of the package 29 so that both of these angles or throats eventually take part in the severing action. In the form shown in Fig. 3, the cutting takes place only at the angle or throat 36.

If tow targets are the objects to be launched from the airplane, it is desired that the packaged tow target be launched from the towing airplane and that it should pull its tow cable or rope from a pack or container until fully extended before the target is released from its bindings. Should the target become released from its bindings prematurely, it may become entangled in its towing lines.

It is believed that the subject of this invention may be of use for the delivery of air freight This might be accomplished by overwrapping a parachute attached to the parcel to be dropped. In this instance, the overwrapped parcel would be launched and when cleared of the airplane, my release would free the binding and wrapping containing the parcel with the parachute attached. By this means, conventional packs might be eliminated.

I claim as my invention:

1. In a cord-severing parcel release, a frame having therein an opening for the attachment of a static line, means for preventing the cutting of the static line at said opening, said frame having a second opening the sides of which are of substantial length, said sides having sharpened edges and running to an acute angle toward the lower end of the frame, a cord extending through said second opening, said cord being capable of

wedging itself toward an apex of the acute angle so that the sides thereof will sever the cord.

2. A cord-severing parcel release adapted for use with aircraft which comprises a sheet metal frame having an opening therein for the retention of a static line, a second opening which is larger than the first and positioned lower, said second opening running to a point at an acute angle at the bottom of the opening, and sharpened edges on those sides of said opening adjacent the said point, a cord extending through said second opening, said cord being capable of wedging itself toward an apex of the acute angle so that the sides thereof will sever the cord.

3. A cord-severing parcel release adapted to be connected to cord-tied parcels from a vehicle, said release comprising a folded blank of sheet metal, each end of said blank being formed into a hook each hook being oppositely disposed from the other, the inner edge of each hook being straight and sharp; the edges running together to a point at an acute angle, said hooks being folded into scissors relation of their sharp edges with each other.

4. A parcel release according to claim 3 in which the point to which the sides run together in one hook is substantially lower on the blank than the corresponding point in the other hook.

5. A cord-severing parachute release comprising a sheet-metal stamping of generally snowshoe shape having in its larger end an opening for the reception of a static line, a grommet of soft material disposed in said opening to protect the static line from being cut, and toward the opposite end, said stamping having an elongated diamond-shaped opening, two of the sides of said opening being sharp and running to a point near the narrower end of said stamping at an acute angle.

6. A cord-severing parachute release which comprises a sheet of spring tempered steel, said sheet bearing a hook at each end, said hooks being oppositely facing and each having an acute-angled bight, the inner edges of each of said bights being sharp, one of said bights being deeper than the other, said sheet being folded upon itself so that the outer hook edges substantially coincide and the sharpened edges of said hooks lie together in scissors blade relation about an opening, the degree of folding at the top of the release being such as to form a semicircular channel of substantially round section with flared edges for the accommodation of a loop of line, and at the bottom a flared pair of edges to facilitate the introduction of taut cordage across the opening formed by the contacting sharp edges of the hooks.

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