

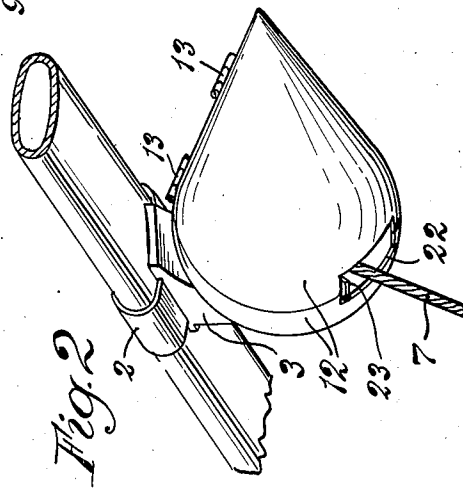
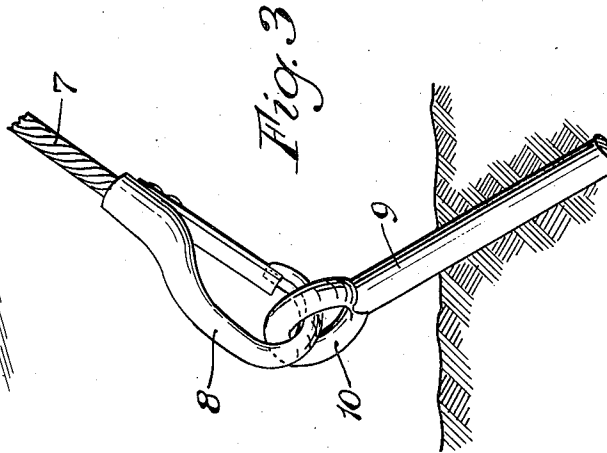
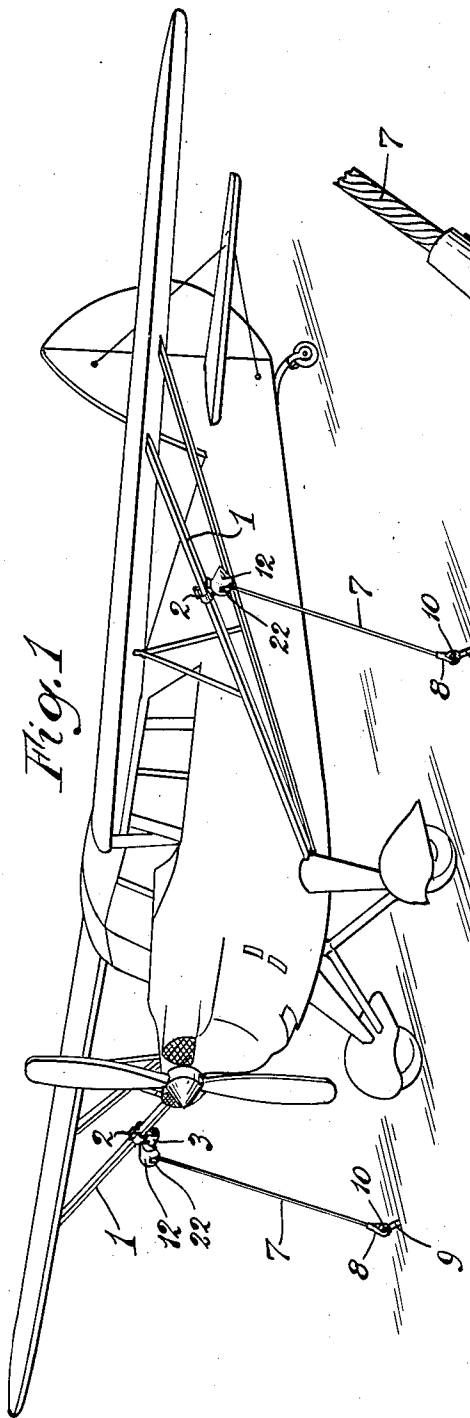
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D. W. GRADY ET AL
AIRPLANE ANCHORAGE MEANS

2,333,559

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2 Sheets-Sheet 1



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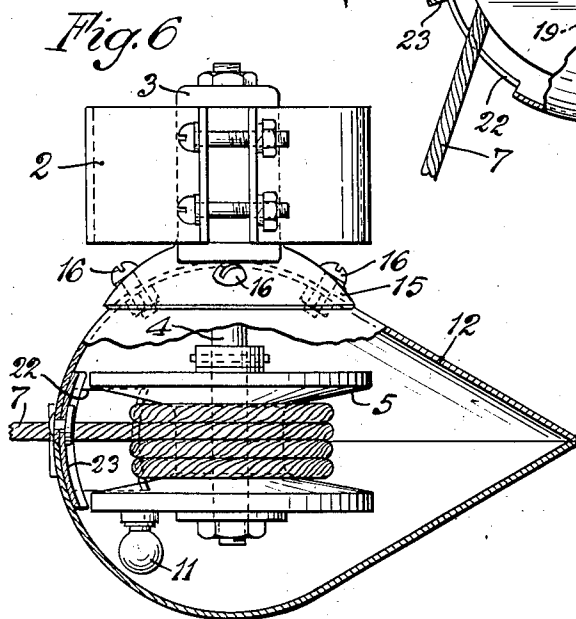
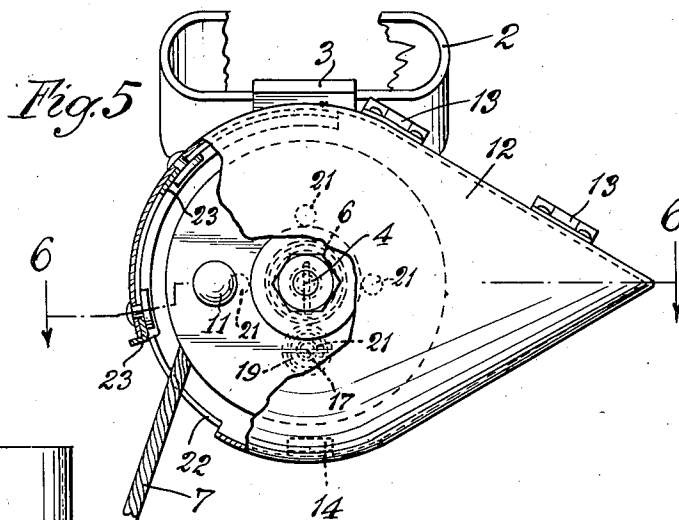
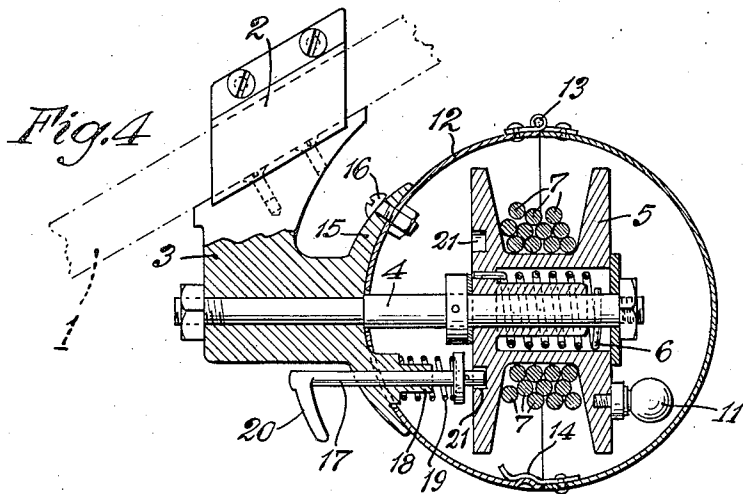
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UNITED STATES PATENT OFFICE

2,333,559

AIRPLANE ANCHORAGE MEANS

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Highland Park, Ill.

Application August 15, 1941, Serial No. 406,940

6 Claims. (Cl. 242-106)

Our invention relates to improvements for airplanes and the like and has for one object to provide an anchorage mechanism which may be permanently attached to the plane and be always available for service.

Another object of the invention is to provide such a mechanism as will interfere to a minimum extent with the progress of the plane through the air.

Other objects will appear from time to time throughout the specification and claims.

Our invention is illustrated more or less diagrammatically in the accompanying drawings, wherein—

Figure 1 is a perspective view of a plane showing the application of the invention;

Figure 2 is a perspective view on a larger scale showing the anchorage housing;

Figure 3 is a perspective view on an enlarged scale showing the anchorage means;

Figure 4 is a view on a transverse section on a larger scale through the device;

Figure 5 is a side view thereof with parts broken away and parts in section;

Figure 6 is a section along the line 6-6 of Figure 5.

Like parts are indicated by like characters throughout the specification and drawings.

1 is a strut adapted to support the wing of an airplane. 2 is a clamp adapted to engage the strut along one edge, to engage a bracket 3 along its other edge. 4 is an axle extending outwardly from the bracket 3, carrying a cable reel 5, rotatably mounted thereon and adapted to be yieldingly held in the retracted or starting position by the spring 6. 7 is a cable wound about the reel. When the cable is in the position shown in Figure 1, the spring 6 is compressed, the spring 6 being strong enough to draw the cable into the housing and wind the cable about the reel. 8 is a hook at the end of the cable adapted to be hooked into the eyelet 10 at the end of the stake 9 if desired. The stake illustrates generally any suitable anchorage means and the eyelet might be on a weight or embedded in the concrete floor of a runway or any other suitable means might be provided for holding the eyelet in position so that when the hook is engaged with the eyelet, the plane will be anchored.

11 is a handle on the reel 5 whereby the reel may be rotated if for any reason the spring 6 fails to operate. 12 is a housing made of two parts joined by the hinge 13 and adapted to be latched by means of a spring latch 14. 15 is a curved extension on the bracket 3 adapted to en-

gage one-half of the housing, the housing being bolted thereto as at 16. The housing may be opened if necessary to provide access to the hand crank 11. 17 is a fastening pin slidable in the lug 18 and thrust into the inner position by a spring 19. The handle 20 may be manipulated to compress the spring and withdraw the pin 17 from engagement with the aperture 21 on one side of the reel 5. The purpose of this pin, is of course, to lock the reel against rotation either in the retracted or extended position of the anchorage cable 7.

22 is an aperture in the forward lower side of the housing 12 through which the cable 7 may extend and is adapted to be closed by a slide 23.

When the hook 8 is released and the cable is wound about the reel 5 by the spring 6, the hook 8 enters the housing through the opening 22. The latch pin 17 is manipulated to lock the reel in position with the hook 8 immediately adjacent the aperture or door 22 and the door is closed by the slide 23. Under these circumstances, the plane may travel, the air resistance being reduced to a minimum by the shape of the housing. When it is desired to anchor the plane, the slide is pushed back, the operator inserts his finger in the opening 22, takes hold of the hook, pulls the cable out, having first released the pin 17. When the cable is fully extended, he allows the pin 17 to engage one of the apertures 21 to anchor the reel and then hooks the eyelet onto the stake or onto any other suitable eyelet on any other suitable anchorage, thus anchoring the plane. This is done on both sides of the plane so that the two anchor cables hold the plane down to the ground. It will be understood that the cables are short so that the angle the cable makes with the ground is a sharp one, thus avoiding the danger of swinging or kite-like flying of the plane under adverse conditions.

It will be released that while we have shown an operative device as illustrated in the drawings, still many changes might be made in the size, shape, number, arrangement and disposition of parts without departing materially from the spirit of our invention. We wish, therefore, that our showing be taken as in a large sense as diagrammatic.

We claim:

1. In combination, a supporting bracket, an axle rigidly mounted thereon, a reel rotatably mounted on the axle, a handle on the reel, an anchorage cord wound about the reel, yielding means for resisting rotation of the reel resultant from drawing out of the cable, a multipart hous-

ing on the bracket enclosing the reel and handle, the housing including a latched cover which may be opened to expose the reel and handle, a latch on the bracket, yielding means within the housing adapted to force the latch into interlocking relationship with the reel to positively prevent reel rotation, a handle outside the housing adapted to be manipulated to disengage the reel and latch.

2. In combination, a supporting bracket, an axle rigidly mounted thereon, a reel rotatably mounted on the axle, a handle on the reel, an anchorage cord wound about the reel, yielding means for resisting rotation of the reel resultant from drawing out of the cable, a multipart housing on the bracket enclosing the reel and handle, the housing including a latched cover which may be opened to expose the reel and handle, a latch on the bracket, yielding means within the housing adapted to force the latch into interlocking relationship with the reel to positively prevent reel rotation, a handle outside the housing adapted to be manipulated to disengage the reel and latch, a relatively small aperture in the front wall of the housing adapted to permit the cable to be drawn off the reel within the housing and a movable cover adapted to open and close said aperture.

3. In combination, a supporting bracket, an axle rigidly mounted thereon, a reel rotatably mounted on the axle, a handle on the reel, an anchorage cord wound about the reel, yielding means for resisting rotation of the reel resultant from drawing out of the cable, a multipart housing on the bracket enclosing the reel and handle, the housing including a latched cover which may be opened to expose the reel and handle, a relatively small aperture in the front wall of the housing adapted to permit the cable to be drawn off the reel within the housing and a movable cover adapted to open and close said aperture, the forward portion of the housing being generally spherical and generally conforming to the peripheral diameter of the reel, the rearward portion of the housing being of teardrop formation with the apex furthest removed from the reel.

4. In combination, a supporting bracket, an axle rigidly mounted thereon, a reel rotatably mounted on the axle, a handle on the reel, an anchorage cord wound about the reel, yielding means for resisting rotation of the reel resultant from drawing out of the cable, a multipart housing on the bracket enclosing the reel and handle, the housing including a latched cover which may be opened to expose the reel and handle, a latch on the bracket, yielding means within the housing adapted to force the latch into interlocking relationship with the reel to positively prevent reel rotation, a handle outside the housing adapted to be manipulated to disengage the reel and latch, a relatively small aperture in the front wall of the housing adapted to permit the cable

to be drawn off the reel within the housing and a movable cover adapted to open and close said aperture, the forward portion of the housing being generally spherical and generally conforming to the peripheral diameter of the reel, the rearward portion of the housing being of teardrop formation with the apex furthest removed from the reel.

5. In combination, a supporting bracket, an axle rigidly mounted thereon, a reel rotatably mounted on the axle, a handle on the reel, an anchorage cord wound about the reel, yielding means for resisting rotation of the reel resultant from drawing out of the cable, a multipart housing on the bracket enclosing the reel and handle, the housing including a latched cover which may be opened to expose the reel and handle, a relatively small aperture in the front wall of the housing adapted to permit the cable to be drawn off the reel within the housing and a movable cover adapted to open and close said aperture, the forward portion of the housing being generally spherical and generally conforming to the peripheral diameter of the reel, the rearward portion of the housing being of teardrop formation with the apex furthest removed from the reel, the latched housing cover which may be opened to expose the reel being hinged along an axis located in the wall of the teardrop portion of the housing and passing through the apex thereof.

6. In combination, a supporting bracket, an axle rigidly mounted thereon, a reel rotatably mounted on the axle, a handle on the reel, an anchorage cord wound about the reel, yielding means for resisting rotation of the reel resultant from drawing out of the cable, a multipart housing on the bracket enclosing the reel and handle, the housing including a latched cover which may be opened to expose the reel and handle, a latch on the bracket, yielding means within the housing adapted to force the latch into interlocking relationship with the reel to positively prevent reel rotation, a handle outside the housing adapted to be manipulated to disengage the reel and latch, a relatively small aperture in the front wall of the housing adapted to permit the cable to be drawn off the reel within the housing and a movable cover adapted to open and close said aperture, the forward portion of the housing being generally spherical and generally conforming to the peripheral diameter of the reel, the rearward portion of the housing being of teardrop formation with the apex furthest removed from the reel, the latched housing cover which may be opened to expose the reel being hinged along an axis located in the wall of the teardrop portion of the housing and passing through the apex thereof.

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