Nov. 16, 1943. C. E. BUCHTEL 2,334,539

DECOY AIRPLANE

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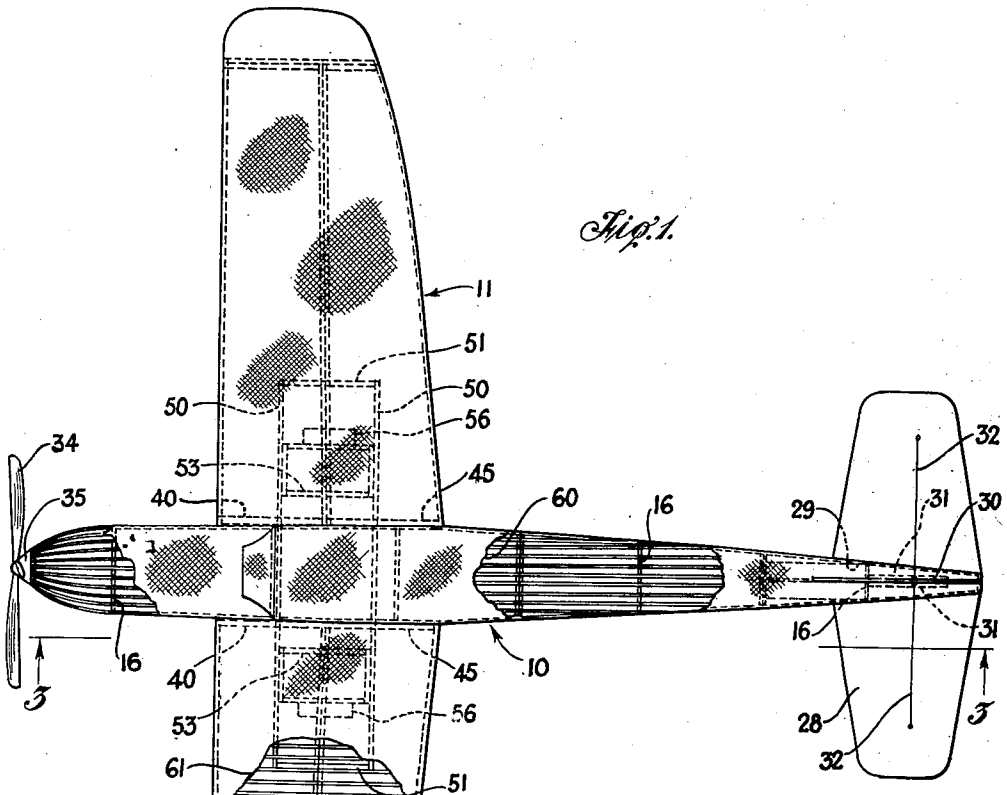


Fig. 1.

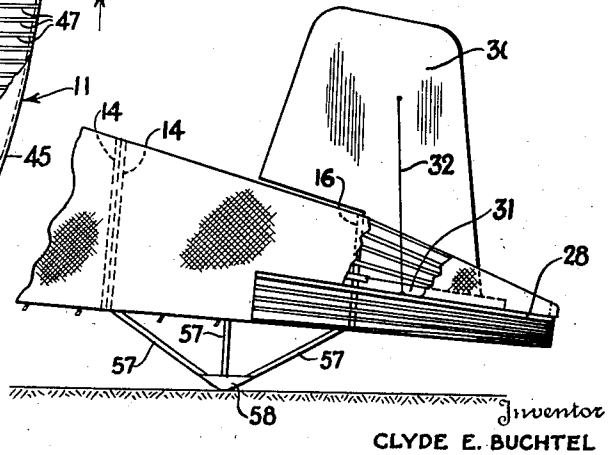


Fig. 2.

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Fig. 3.

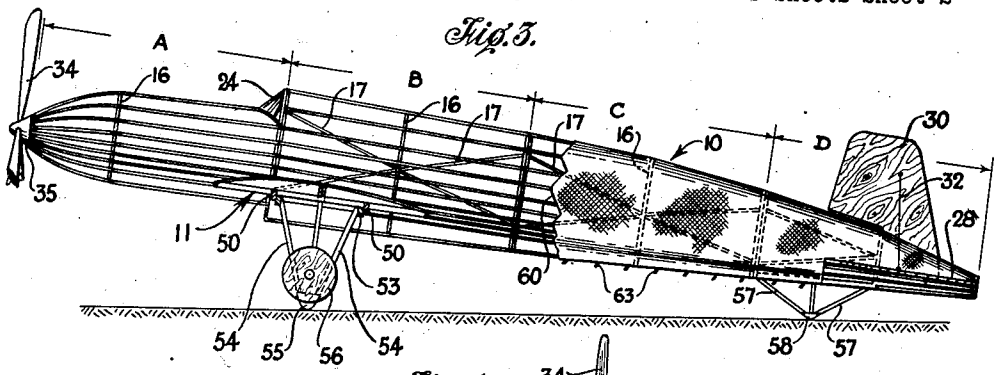


Fig. 4.

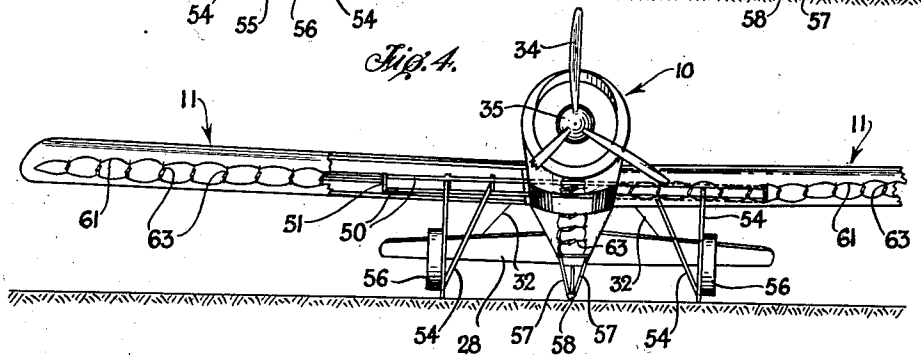


Fig. 5.

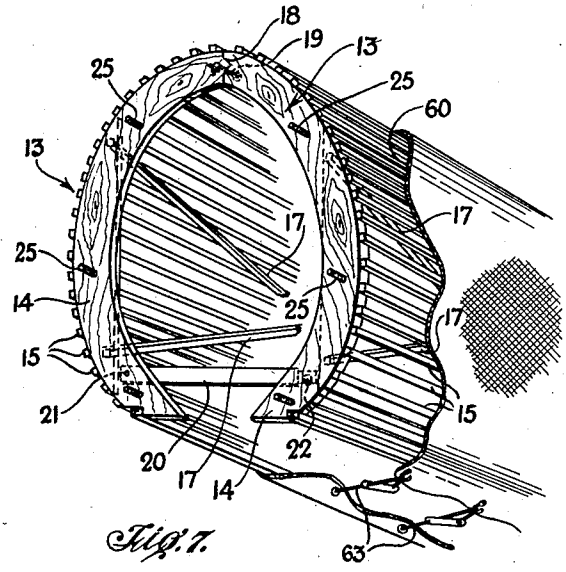


Fig. 6.

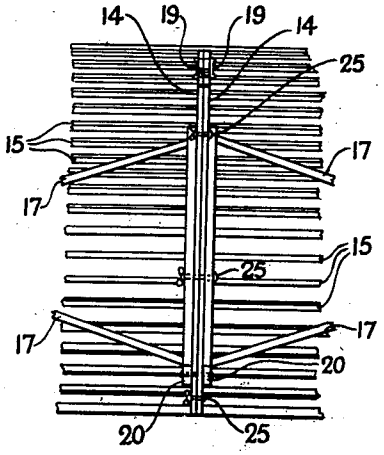
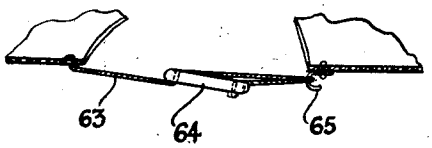


Fig. 7.



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Fig. 8.

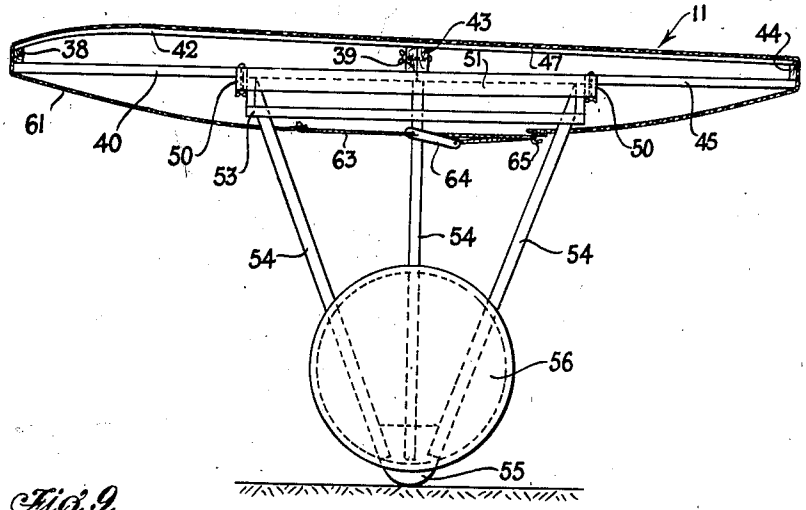
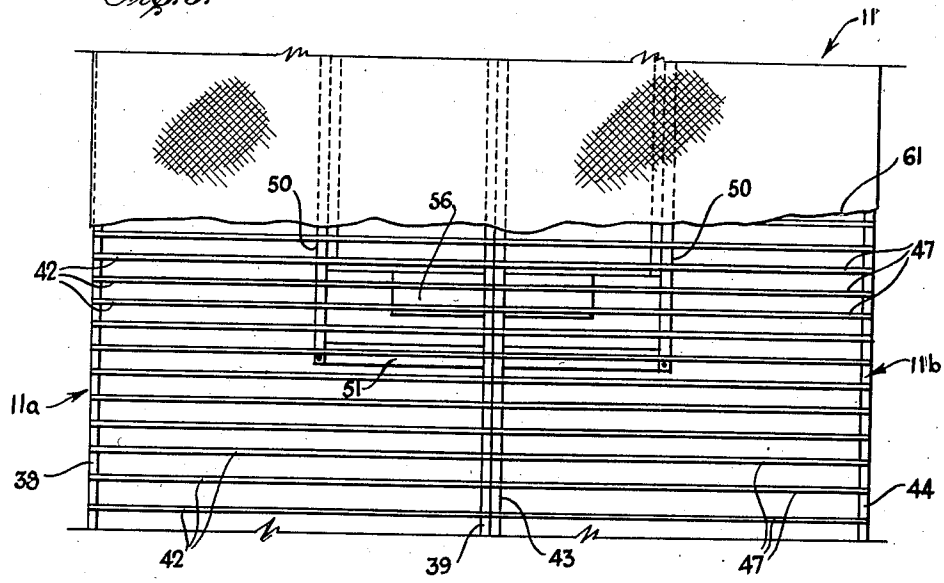


Fig. 9.



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2,334,539

DECOY AIRPLANE

Clyde E. Buchtel, Akron, Ohio, assignor to Monco Inc., Akron, Ohio, a corporation of Ohio

Application July 30, 1942, Serial No. 452,977

10 Claims. (Cl. 35—25)

This invention relates to decoy airplanes such as are employed in military strategy to deceive the enemy. By means of such decoys the enemy may be deceived as to the location of airfields and the number of airplanes based thereat; he may be caused to waste valuable ammunition and fuel in destroying or attempting to destroy material of no offensive or defensive value; and in general, he may be enticed into making hazardous excursions into territory where he may be ambushed by defense artillery or by interceptor aircraft based at nearby concealed bases.

The chief objects of the invention are to provide an improved decoy airplane that is of relatively simple construction; that readily may be assembled and disassembled; that will be a three-dimensional structure so as more deceptively to simulate the appearance of an actual airplane even at relatively low altitudes; and that may be cheaply manufactured so that its destruction in service will entail no great loss. Other objects will be manifest as the description proceeds.

Of the accompanying drawings:

Fig. 1 is a plan view of a decoy airplane embodying the invention, a part of the cover thereof being broken away to reveal underlying frame structure;

Fig. 2 is a fragmentary side elevation, on a larger scale, of the rear end portion of the decoy, a part thereof being broken away;

Fig. 3 is a side elevation of the structure shown in Fig. 1, a part of the cover thereof being broken away, and a part being in section on line 3—3 of Fig. 1;

Fig. 4 is a front elevation of the decoy;

Fig. 5 is a fragmentary perspective view, on a larger scale, of one of the longitudinal body sections of the fuselage of the decoy, and the cover thereon;

Fig. 6 is a fragmentary detail elevation showing the juncture of two adjacent body sections of the fuselage;

Fig. 7 is a detail elevation of one of the elements employed for holding the cover in taut condition upon the wings and fuselage of the decoy;

Fig. 8 is a section, on a larger scale, on line 8—8 of Fig. 1; and

Fig. 9 is a plan view of the structure shown in Fig. 8.

Referring to the drawings, there is shown therein a decoy airplane simulating the appearance of a single-motor, low-wing monoplane. The decoy comprises the usual fuselage, designated as a whole by the numeral 10, and the usual wings designated as a whole by the numerals 11, 11, secured thereto and projecting from each side thereof.

The fuselage 10 comprises a framework that is divided into a plurality of longitudinally extending sections, which sections are shown herein as four in number, the extent of said sections being indicated by the characters A, B, C, and D, Fig. 3. As is best shown in Figs. 5 and 6, each section of fuselage comprises two substantially identical, transversely arcuate frame elements 13, 13 adapted to be assembled with each other with concave sides in confronting relation to provide a generally tubular fuselage section. Each frame element 13 comprises arcuate end-rails 14 at each end thereof, and longitudinally extending slats 15, 15 secured to said end-rails and connecting the same. The frame elements also may be provided with intermediate braces 16 similar to the end-rails 14, and with diagonal braces 17. Each frame element 13 constitutes the side of a fuselage section and when the two elements of a section are in assembled relation, the end-rails 14 of the sections are in end-to-end relation at the top of the fuselage, but stand apart from each other at the bottom thereof as shown in Fig. 5. At the top of the fuselage the abutting ends of a pair of end-rails 14 are complementally formed with notch and tongue 18 to effect accurate registry of the abutting parts, said parts being here secured to each other by a simple hook or latch 19. At the bottom of the fuselage the spaced-apart ends of the end-rails 14 of the elements of a section are connected by a bar 20 that is pivotally mounted at 21 on one end-rail and has its other end notched for engagement with a screw or stud 22 on the other end-rail.

The arrangement is such that the frame elements 13 of each fuselage section readily and easily may be assembled with each other, and as easily dis-assembled. Although each half or element of each fuselage section is substantially identical with the other half or element thereof, the sections themselves are not identical, but are of such shape longitudinally of the fuselage that when they are assembled end-to-end they provide the latter with the desired streamline shape. This is clearly shown in Figs. 1 and 3 wherein it will be seen that tail section D tapers gradually toward a relatively small flat end at the rear thereof, and nose section A not only tapers sharply toward its forward end, but is formed with a stepped or offset portion 24 at its rear end in

simulation of the wind-shield at the front of the cockpit of an airplane. The four sections of the fuselage are assembled with each other in proper sequence in end-to-end relation and are secured to each other by bolts 25 that extend through the end-rails of the sections at the confronting ends thereof. The bolts 25 are provided with wing nuts for easy manipulation and application.

The tail section D is arranged to carry an empennage assembly in simulation of the vertical and horizontal stabilizers and rudders of conventional airplanes, and to this end the elements 13 of said tail section are laterally slotted from the rear end thereof forwardly to the intermediate braces 16 thereof, and mounted in said slots is a horizontal stabilizer member 28, the front margin of which is deeply recessed, as indicated at 29, Fig. 1, so as to extend forwardly of said braces 16 at each side of said elements 13. The stabilizer member 28 is shown as a one piece structure, but it may be made of a plurality of transverse sections if desired so as to be collapsible for storage in a relatively small crate. In like manner the said elements 13 of section D stand apart from each other at top of the section along the centerline of the section from the rear end thereof to the braces 16, and received in said slot is a vertical stabilizer and rudder structure 30. Rearwardly of the braces 16 the structure 30 rests upon the horizontal stabilizer member 28, the latter having a pair of spaced apart cleats 31 secured to its top face to define a groove in which the bottom margin of structure 30 is received. Forwardly of the braces 16 the structure 30 overhangs the section structure in close proximity thereto. The vertical and horizontal stabilizer structures are additionally braced by small wires or cables 32 connecting them to each other.

As previously stated, the nose section A tapers sharply toward its forward end, and swiveled on said forward end is propeller 34 or reasonable simulation thereof, said propeller being herein shown as having three blades. A conical sheet metal fairing or nose piece 35 is mounted on the hub of the propeller in continuation of the taper of the forward end portion of the section A.

Each of the wings 11 that extend from opposite sides of the fuselage comprises two longitudinally extending skeleton sections 11*a* and 11*b* arranged side by side, and a wing-tip section 11*c* supported thereby at the end thereof remote from the fuselage. As is best shown in Figs. 8 and 9, the wing section 11*a*, which is the leading side of the wing, comprises longitudinally extending wooden side-rails 38, 38 that are connected to each other at their ends by cross-pieces 40, 40, said cross-pieces disposed on the under side of said side-rails. Also connecting said side-rails are a multiplicity of wood slats 42, 42 that are disposed on the top of said side-rails, and somewhat upwardly bowed to simulate the camber of conventional airplane wings. In like manner the wing section 11*b* comprises side-rails 43, 44, end cross-pieces 45, 45, and transverse slats 47, 47. In the assembling of the wing sections 11*a*, 11*b* with each other, the side-rail 38 of section 11*a* and side-rail 43 of section 11*b* are brought into laterally abutting relation and secured to each other by suitable bolts, as shown in Fig. 8. When thus assembled the rail 38 is at the leading edge of the wing, the rail 44 is at the trailing edge of the wing, and the end-rails 40, 45 are in longitudinal alignment. The wing tip section 11*c* preferably is of plywood and has one straight margin that is disposed in laterally abutting relation to the end-rails 40, 45 at the outer end of the wing, and is releasably secured thereto by suitable bolts.

The wings 11 are attached to the fuselage 10 and supported thereby by means of a pair of parallel, elongate joists or arms 50, 50 that extend through the fuselage section B, forwardly of braces 16 thereof, and are removably secured thereto so as to be easily mounted or dismounted in the setting up of the decoy or the dis-assembling thereof. The arms 50 are connected to each other by transverse pieces 51 at their opposite ends. The end cross-pieces 40, 45 at the inner ends of the wing frames rest upon and are bolted to the arms 50, 50, and the abutted side-rails 39, 43 of the wing frames rest upon the cross pieces 51 at the ends of said arms 50. Preferably the arms 50 are notched to receive the said cross-pieces 40, 45, the arrangement being such that the wing frames tilt somewhat upwardly toward their outer ends.

For supporting the decoy at the proper elevation from the ground, respective rectangular frame element 53, 53 are mounted at opposite sides of the fuselage between the arms 50 and removably secured to the latter. Each frame element 53 carries three struts 54 that extend obliquely downwardly and connect at their lower ends to a skid piece 55, two of said struts being in the same vertical plane and the other disposed at an angle to said plane. Fixedly mounted on the two struts that are in the same plane is a circular wooden disc 56 that is painted to simulate an airplane landing wheel and tire. The disc 56 is so mounted as to be positioned a few inches above the ground, the skid pieces 55 resting upon the ground to support the forward end of the decoy. At the tail end of the decoy three struts 57 are removably secured to the elements of fuselage section D, on the bottom thereof and have their lower ends connected to a skid piece 58 that rests upon the ground. The struts 57 support the rear end of the decoy, and are of such length that said decoy slopes downwardly toward its rear as is customary with aircraft.

The decoy is provided with a cover of duck, canvas, or similar suitable material, and said cover is made in three pieces to cover the fuselage frame and the two wing frames respectively. The cover units are tailored to fit the respective frame members, and completely cover the tops of said members, said cover units being secured to the frame elements by lacing engaging the margins of the units on the under side of the frame elements. The fuselage cover is designated 60 and each wing cover is designed 61. At the tail of the decoy the cover 60 is centrally slotted to admit the vertical stabilizer and rudder structure 30, and may be cut away beneath the horizontal stabilizer structure, as shown, since this region is not visible from above, the tail end of the cover being suitably secured to the rear end of fuselage section D. The cover 60 may also be cut away beneath the wings 11, as shown in Fig. 4, for the same reason.

The lacing by means of which the cover units are secured to the fuselage and wing frames is best shown in Figs. 4, 5 and 7. It comprises short ropes or cables 63, 63, each having an end thereof secured to a cover unit adjacent one margin thereof, and extending through a small hole in a wooden pin 64, the other end of said rope being secured to one end of said pin. By means of the pin the rope is formed with an adjustable loop, and the latter may be looped over a hook 65 on the opposite margin of the cover unit. By

means of the pins 64 the ropes may be drawn taut to tighten the cover units upon the frame members of the decoy, yet may be loosened quickly when it is desired to dismantle the latter.

When the decoy is first constructed, and after the cover units 60, 61 have been laced thereon as shown, said cover is painted in such a manner as closely to simulate the appearance of a conventional airplane as viewed from above. In drying, the paint shrinks the cover fabric somewhat so that the cover is more tightly stretched over the frame. The empennage assembly and simulated landing gear are painted at the same time as the cover.

The invention provides a decoy that is deceptively similar to an airplane when viewed from a short distance, especially from above. The decoy is relatively cheap to construct, may be towed from one location to another, is readily assembled and dis-assembled, and achieves the other objects set out in the foregoing statement of objects.

Modification may be resorted to without departing from the spirit of the invention, or the scope thereof as defined by the appended claims.

What is claimed is:

1. A decoy airplane comprising a fuselage frame composed of a plurality of readily separable longitudinal sections, wing frames supported by one of the fuselage sections, a removable fabric cover for the fuselage frame, respective removable covers for the wing frames, a simulated propeller mounted upon the nose of the front fuselage section, and an empennage structure carried by the rear fuselage section.

2. A decoy airplane of the character described comprising a fuselage frame composed of a plurality of longitudinal sections arranged end-to-end and releasably secured to each other, said sections each composed of two component elements disposed side by side, said elements being transversely arcuate and abutting each other at the top of the frame but spaced apart at the bottom thereof, and means releasably connecting the elements of each section to each other.

3. A decoy airplane of the character described comprising a fuselage frame composed of a plurality of longitudinal sections arranged end-to-end and releasably attached to each other, the rear end of the tail section being transversely slotted, and a horizontally disposed stabilizer and elevator structure mounted in said slot and projecting from opposite sides of the section, the forward margin of the stabilizer being deeply notched so as to extend forwardly beyond the slot at each side of the fuselage frame.

4. A combination as defined in claim 3 wherein the tail section of the fuselage is slotted along its centerline from the rear end of the section, including a vertical stabilizer and rudder structure mounted in said slot and having a portion resting upon the horizontal stabilizer structure, said vertical stabilized having an offset portion extending forwardly beyond said slot.

5. A combination as defined in claim 3 wherein the tail section of the fuselage is slotted along a portion of its centerline extending forwardly from the rear end of the section, including a vertical stabilizer and rudder structure mounted in said slot and resting upon the horizontal stabilizer structure, and a pair of parallel spaced apart cleats on the top face of the latter defining a groove in which the bottom margin of the vertical stabilizer structure is received.

6. A decoy airplane of the character described comprising a fuselage frame, a pair of parallel joists extending through the fuselage frame and projecting each side thereof, and respective wing frames at each side of the fuselage mounted upon the projecting portions of said joists and releasably secured thereto.

7. A combination as defined in claim 6 in which each wing frame comprises two longitudinally extending sections disposed side by side and releasably connected to the joists and to each other, and a wing tip section releasably connected to the two longitudinal sections at the outer end thereof.

8. A decoy airplane of the character described comprising a fuselage frame, a pair of parallel joists extending through the said frame and projecting each side thereof, respective wing frames at each side of the fuselage and releasably mounted upon the projecting portions of said joists, and struts releasably connected to said joists at each side thereof and converging downwardly to respective skid blocks to constitute supports for the forward end of the decoy.

9. A decoy airplane comprising a fuselage frame simulating the top and sides only of an airplane frame, wing frames secured thereto and projecting laterally from each side thereof, and respective fabric covers for the fuselage frame and each wing frame, said covers partly enveloping said frame, including means for drawing the margins of the covers toward each other on the under side of said frames.

10. A decoy airplane of the character described comprising a fuselage frame composed of arcuate separable elements connected to each other, said elements being in abutting relation along the top of the fuselage and spaced apart along the bottom thereof so as to simulate only the top and opposite sides of an airplane frame, and a one-piece fabric cover mountable on said frame and covering the same except the open bottom thereof.

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