March 18, 1952 W. R. CUSTER 2,589,994

HIGH LIFT WING CHANNEL WITH MOVABLE WING

Filed Jan. 3, 1950

Fig. 1

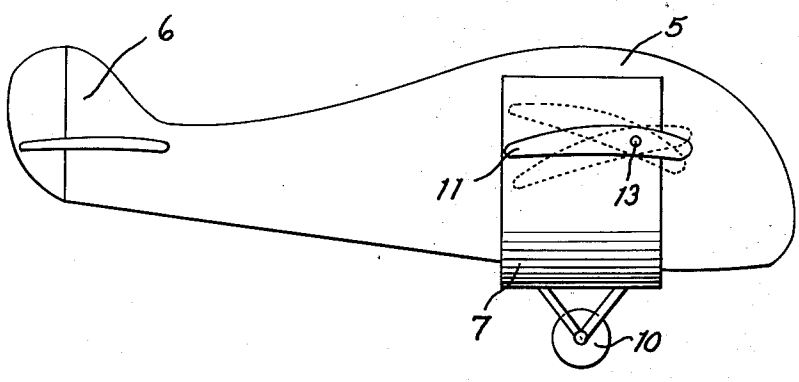
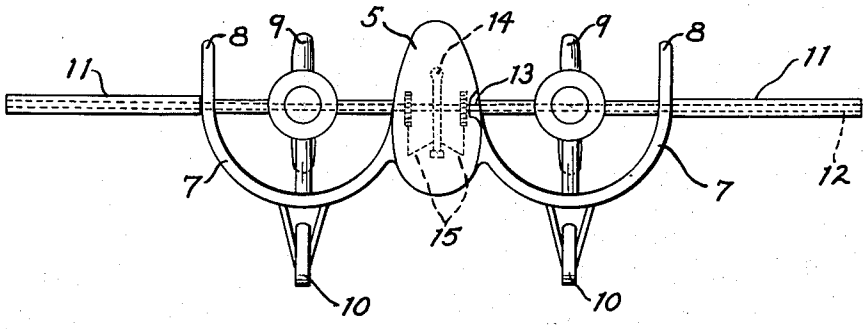


Fig. 2



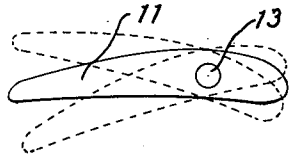


Fig. 3

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HIGH LIFT WING CHANNEL WITH MOVABLE WING

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Application January 3, 1950, Serial No. 136,585

1 Claim. (Cl. 244—35)

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This invention comprises high lift wing channels with movable wings, being an improvement of my application for airplane with high lift channeled wings, filed April 16, 1942, Serial No. 439,257 which is now Patent No. 2,510,959. In said application, Serial No. 439,257, the channels are equipped with inboard and outward ailerons each forming a part of a wing-like member superimposed on the channels and fuselage. With the present improvement, said member is eliminated and I employ wings movably mounted on the outer wall of each channel. Repeated tests have proven that this outboard wing is particularly effective for expeditious control without in any way mitigating the advantages and results flowing from the use of the channels.

In a practical embodiment of this invention, the outboard wings are operable from the cockpit by rotation of a single shaft which extends through the channels and into operative engagement with said wings.

Other objects of this invention will be apparent from the following description of the present preferred form of the invention taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of an airplane constructed in accordance with the present invention showing the outer wall of one of the channels with a wing pivotally mounted thereon;

Figure 2 is a front elevational view of the same, and

Figure 3 is a side elevational view of a wing constructed in accordance with the invention, dotted lines being employed to show different positions of the wing.

The device of the present invention includes a fuselage 5 which may be of conventional construction, including a tail structure 6. A channel 7 is carried by each side of the fuselage 5, the channel opening upwardly and extending in the direction of flight. The outer wall of each channel extends upwardly as indicated at 8. Operatively mounted in close proximity to the aft edge of each channel 7 is a propeller 9, the propeller being disposed, with respect to said channel, in such a manner as to be effective to produce a rearward flow of air over the

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inside channel wall. Each channel is also equipped with suitable landing mechanism 10. The outer wall of each channel 7, preferably at the juncture of the top of the channel wall and the extension thereof, is a wing 11 provided with an opening 12. A shaft 13 extends transversely through the fuselage 5, channel 7 and openings 12, as shown in Figure 2. The shaft 13 is rotatably mounted so as to impart pivotal up and down movement to the wings 11 as shown in Figure 3. The shaft 13 is rotated by a control element 14 conveniently mounted in the cockpit of the fuselage and in operative engagement with the shaft through suitable mechanism 15.

With the present invention substantially vertical lift and descent may be effected as with other types of Custer channel wing airplanes. It has been found that with the positioning of the movable wings 11 substantially as herein illustrated and described, effective control may be exercised over the airplane by the pilot.

It is, of course, to be understood that various changes may be made in this invention without departing from the spirit and scope of the invention as covered in the appended claim.

What I claim is:

An airplane including a fuselage, an upwardly opening fore and aft extending channel on each side of the fuselage, a shaft extending transversely through the fuselage and channels, the ends of the shaft projecting beyond the outer walls of the channels, a wing carried by each projected end of said shaft, and means in the fuselage operatively connected with the shaft for imparting up and down movement of the fore and aft ends of the wings.

WILLARD R. CUSTER.

REFERENCES CITED

The following references are of record in the file of this patent:

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2,369,832	Klose	Feb. 20, 1945
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