May 13, 1930. T. A. HODGDON 1,758,399

TOY AIRPLANE

Filed Sept. 24, 1928 2 Sheets-Sheet 1

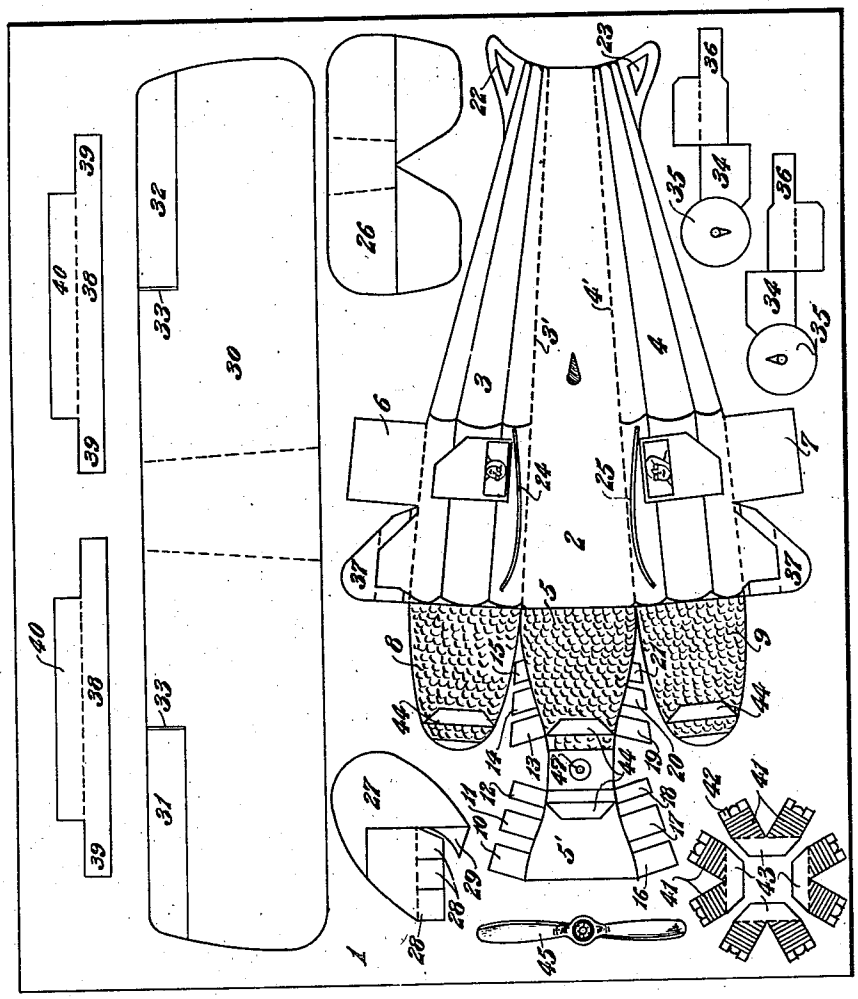

Fig. 1.

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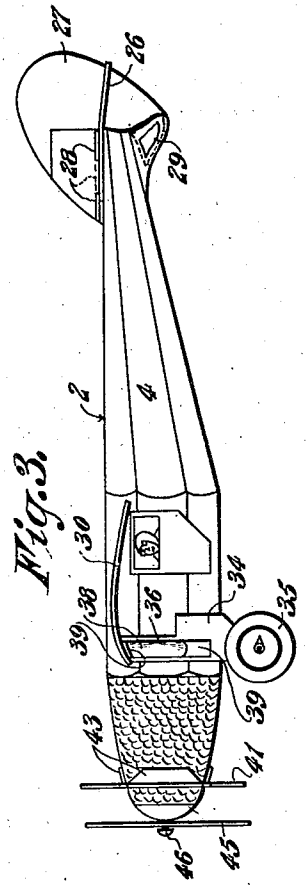

Fig. 3.

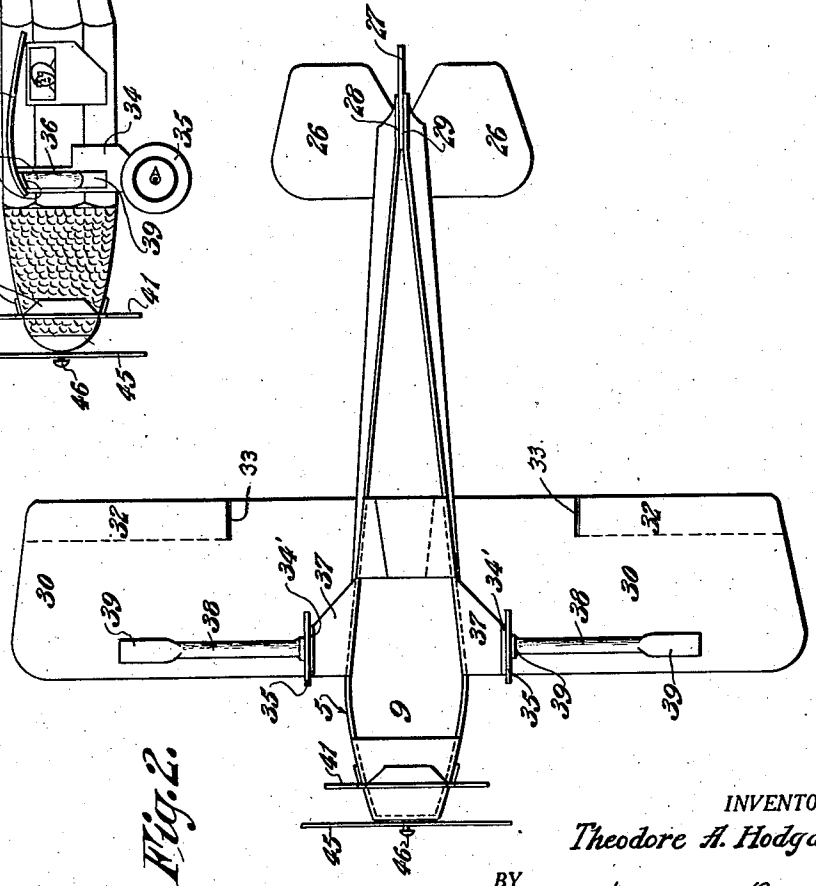

Fig. 2.

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UNITED STATES PATENT OFFICE

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TOY AIRPLANE

Application filed September 24, 1928. Serial No. 307,928.

This invention relates to improvements in the construction of toy airplanes.

An object of the invention is to lay out a model airplane on a piece of stiff paper, or thin fibre wood, so that the component parts, such as the wings, fuselage, tail surfaces, landing gear, dummy engine and propeller, may be cut from the layout, then folded, pasted, where noted on the layout, and assembled for the purpose of forming a miniature prototype, of the original, after which the layout is patterned. After the parts are cut out and assembled, the toy model may properly be weighted, in order to make it glide for a short distance through the air, when projected by the hand.

Referring to the drawings:

Fig. 1 is a plan view representing a piece of paper on which lines are placed for indicating, where the cutting of the various parts composing the airplane or model airplane are to be made. Fig. 2 is a bottom plan view of the finished airplane, and Fig. 3 is a side elevational view showing the completed airplane.

Referring to the drawings in detail:

1 designates a piece of paper, or several sheets, or thin fibre of wood, on which the various parts composing the completed article are indicated. The fuselage or body portion is composed of the top portion 2 and the opposite side portions 3 and 4.

The front end of the body is indicated at 5 having the appendages. The side pieces 3 and 4 are formed with the flaps 6 and 7 and the extensions 8 and 9, at their forward ends. The front part 5 is formed with the flaps 10, 11, 12, 13, 14 and 15, on one side, and the flaps 16, 17, 18, 19, 20 and 21 on the opposite side. The rear or tail portion of the body is formed with the lateral tail skid extensions 22 and 23.

The side pieces 3 and 4 are formed with the curved slits 24 and 25 for receiving and mounting the wings, when the parts are assembled. These curved openings are so cut as to impart the necessary aerodynamic camber to the wings, when inserted completely through these openings in the fuselage, as will be described later on. 26 designates the tail plane, that is pasted on the upper rear surface of the body of the fuselage, as shown in Figures 2 and 3.

The rudder is indicated at 27 having the three integral flaps 28 and the downwardly extending flap portion 29, which is secured between the two tail skid pieces 22 and 23 of the body 2, when the fuselage is assembled. The wing member is indicated at 30, which comprises a single piece of paper or other material cut out and inserted through the curved openings 24 and 25 in the fuselage. 31 and 32 are the ailerons which are formed by means of the slits 33, as shown. The two landing gear elements are indicated, or designated as a whole, by the numerals 34, which comprises the integral wheel parts 35 and the flap extension 36 which are secured to the sides 3 and 4, when assembled. 37 are pieces that are integral with the side portions 3 and 4 and are folded against the portions 34, where they are secured by paste, as indicated at 34′ and serve as braces for the landing gear, as shown in the bottom plan view in Fig. 2.

38 are braces extending from the underside of the wing to the landing gear where its ends 39 are flattened and pasted against the underside of the wing and the landing gear, as shown. The portion indicated at 40 is folded over onto the part 38 in order to provide a double thickness of bracing material. If desired, tubular pieces of paper may be provided for these braces, as shown in Fig. 2.

41 designates motor pieces cut out to indicate the cylinders of the engine indicated at 42. These pieces have flap portions 43 for attaching the motor pieces to the portions 44 of the nose part of the fuselage. After the parts are assembled, the propeller 45 is attached by means of a pin 56 in the opening 47. The steps in forming the toy flying machine are substantially as follows:

After the various parts of the fuselage, (or body), the landing gear, tail, plane, rudder, wings, propeller, braces, and engine are laid out on paper, or thin wood, they are cut

to provide the various elements. The fuselage is a single piece. The operator bends the sides 3 and 4 along the dotted lines 3′ and 4′, at right angles to the top part 2. The flaps 6 and 7 are secured together by paste. They retain the sides in place. The extensions 8 and 9 of the nose are secured in place by being pasted to the flaps 13, 14, 15, 19, 20 and 21. Next, the nose part 5′ is folded under the portion 5 and secured in place with the extension flaps 10, 11, 12, 16, 17 and 18 to the inside of the portion 5.

The tail plane 26 is now pasted to the top of the body part 2. The rudder 27 is secured in place by means of the flaps 28, which are pasted to the tail plane. The part 29, covered with paste, is inserted between the skid pieces 22 and 23 and secured by pressure on their opposite sides, for the paste to set.

The landing gear 34 is next attached by pasting the extension 36 to the opposite sides 3 and 4. The extensions 37 are now pasted to the inside of the landing gear 34.

The wing 30 may now be inserted in the two curved openings 24 and 25, which openings impart the necessary aerodynamic camber or bend to the wing.

The tubular braces 38 are now put in place by securing their opposite ends to the underside of the wing 30 and the outside of the landing gear pieces 34.

The flaps 43 of the motor pieces 41 are attached to the portions 44 of the nose piece. The pin 46 is passed through the opening of the propeller and inserted in the end of the folded end of the nose.

Suitable means may be provided for weighting the forward end of the completed model to make it glide properly, when projected.

What I claim as new and desire to secure by Letters Patent is:

1. An airplane model having an integral top and foldable side portions, the side portions having tail skid extensions, which are located in opposed relation to each other, a tail plane secured to the top of the body part, a rudder formed with integral flaps to receive paste for attaching the same to the top of the tail plane, and having an extension that is located between the skid extensions for attaching the same thereto.

2. In a toy airplane, the combination with the fuselage or body part, V-shaped parts representing the cylinders of a motor and having bendable flaps at the apex of the V which are secured to the sides of the nose part of the fuselage by means of paste.

3. A one piece fuselage comprising a top, two sides, and a bendable nose portion, the said sides having means for receiving a one piece wing and for imparting the necessary aerodynamic camber to the wing, the fuselage having extensions located in opposed relation to provide a tail skid.

4. A toy airplane having in combination a one piece fuselage, landing gear secured thereto, comprising wheel parts and an extension for attachment to the sides of the fuselage, pieces secured to the bottom of the fuselage and to the inside surfaces of the landing gear, a wing secured to the fuselage, and tubular braces extending from the landing gear to the bottom surface of the wings.

5. A toy airplane comprising a fuselage portion, a separate tail plane secured to the upper rear end surface of the fuselage, a rudder, means comprising integral flaps for securing the rudder to the tail plane and to the tail skid of the fuselage; and V-shaped elements representing motors having integral flaps for securing the said elements to the sides of the nose portion of the fuselage.

THEODORE A. HODGDON.