March 27, 1934. H. STEIFF 1,952,952

MODEL AIRPLANE

Filed Nov. 18, 1932

Fig. 2.

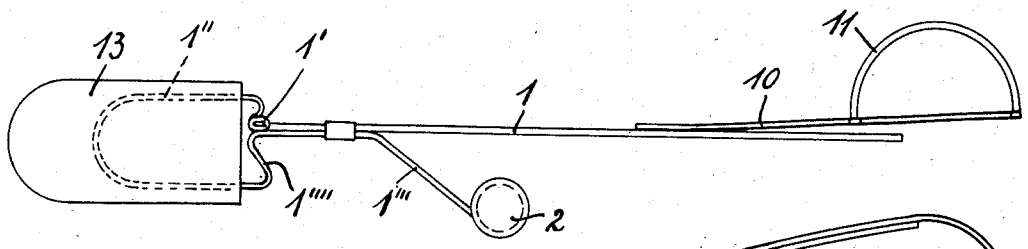
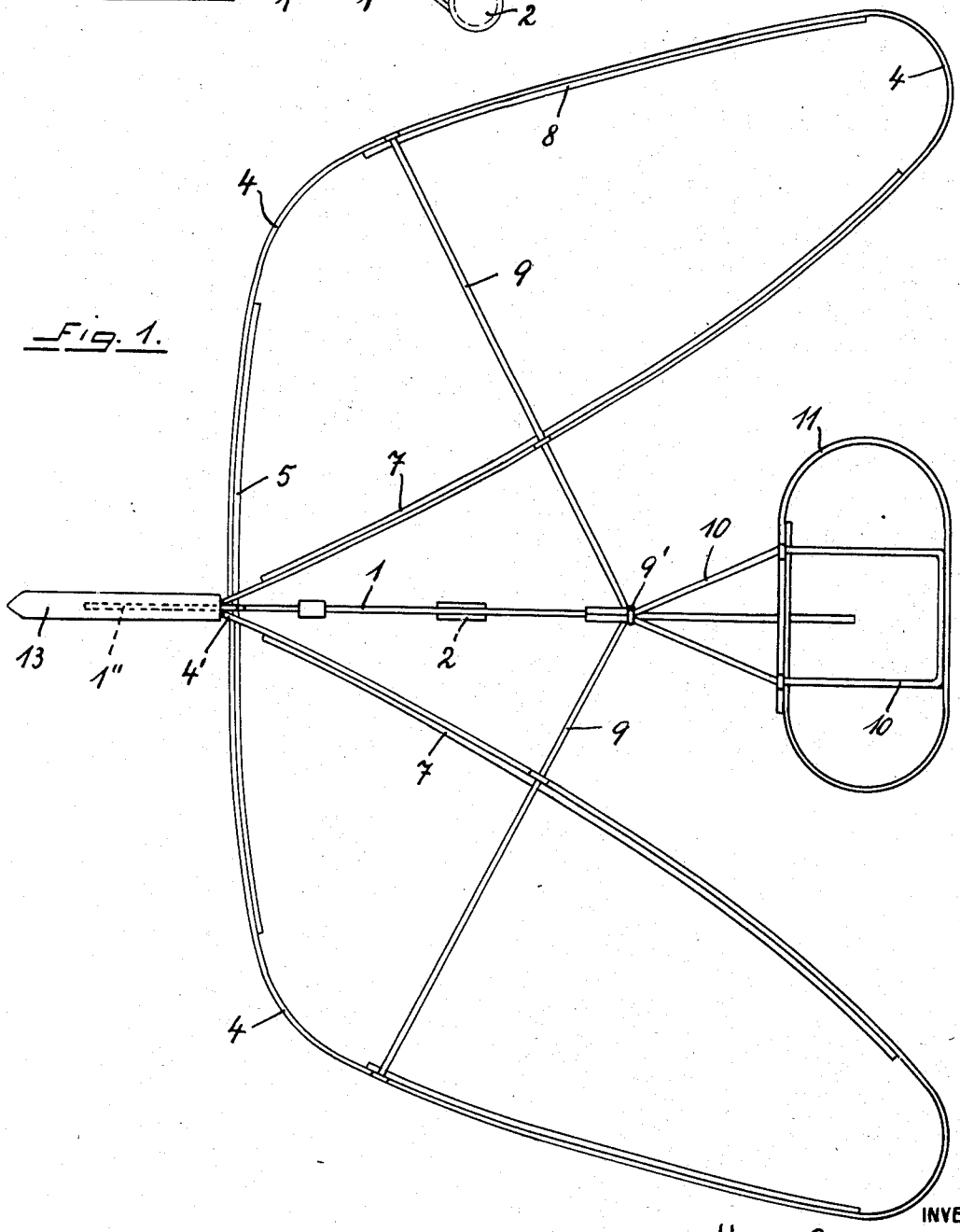


Fig. 1.



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MODEL AIRPLANE

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3 Claims. (Cl. 46—50)

The invention relates to model airplanes having wing frames or skeletons made of wire, commonly steel wire, a single length of wire being used for the main frame structure of both wings. The shaping of this wire is a delicate operation, in view of the accuracy required to give the proper balance. At the front edge of the wing frame a nearly straight outline is required, and with the wire commonly used it is difficult to maintain this outline, in view of the stresses arising from sharp bends given to other parts of the wire.

According to my invention the wire is reinforced, at the part forming the front edge of the frame, by a length of reinforcing wire extending along that part and joined thereto, so that this part is composite and stiffened. I may attach similar reinforcing wires to other parts of the main wire where the bending is slight, the sharp bends then occurring at the gaps between the reinforced parts.

The invention is illustrated in the accompanying drawing, in which

Fig. 1 is a plan view, of the model airplane, and Fig. 2 is a side view, with the wing frames omitted.

The center piece or keel of the frame consists of a steel wire 1 extending fore and aft. In front this wire is looped to form a small eye 1^1 and a large loop 1^{11}, both the eye and the loop being in vertical plane. From the loop 1^{11} the wire extends rearwards, and the end portion 1^{11} thereof is downwardly and rearwardly inclined. This part 1^{111} carries a disk 2, which serves as a handle and weight for balancing the model. The lower rear part 1^{1111} of the loop 1^{11} juts rearwards to form a nose for engaging the string of a catapult. A rubber nose 13 is fitted on to the loop 1^{11}.

The wing frame consists mainly of a single piece of wire 4, which extends transversely of the machine through the eye 1^1 and is bent to form two rearwardly extending loops, one for each wing. The ends of this wire 4 are bent to form hooks 4^1, engaging over the transverse portion of the wire near the eye 1^1. The wire 4 is reinforced, in parts, by wires 5, 7, 8 soldered thereto, these reinforcing wires being placed at the parts where little or no bending of the wire 4 is required for fashioning the wing frames. The wing frames thus retain sufficient flexibility to allow of adjustments being made before finally assembling the parts, and such adjustments may include shifting the hooked ends 4^1 of the wire outwards from the center of the machine.

Stays are formed by a wire 9, looped to form an eye 9^1 embracing the wire 1. This wire 9 extends across the wing frame, and is attached to both limbs of each wing.

A tail frame is formed of two wires 10, 11 having their ends attached to the wire 1.

At the parts where the wires touch or cross each other solder is applied for making joints. The frame is, consequently, a strong, unitary structure, though possessing an adequate degree of flexibility.

For completing the model the frame is covered with paper or fabric, as required.

For launching the model the nose 1^{1111} is engaged with the catapult string, which is stretched with one hand, the other hand holding the disk 2. On release of the string the model flies upwards, as the slip stream depresses the resilient tail. When the velocity decreases the tail bends up again, causing the model to describe in its flight a loop, whereupon it descends to the ground.

The tail frame may be formed in the same way as the wing frames, and may be used for carrying a rear plane of moderate size. The reinforcing wires of the wing frames, and of the tail frame if reinforcing wires are used therewith, may be of different thicknesses at different parts, according to the different degrees of bending required.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a model airplane a wing frame structure consisting of a piece of bent wire of the full length required for the leading edge of both wings and for two loops extending rearwards from said leading edge, and pieces of reinforcing wire extending along, and joined to, said first mentioned piece of wire, said reinforcing pieces having between them gaps occurring at the parts where said first mentioned wire is bent for the formation of said loops.

2. In a model airplane a wing frame structure consisting of a piece of bent wire of the full length required for the leading edge of both wings and for two loops extending rearwards from said leading edge, and pieces of reinforcing wire extending along, and joined to, said first mentioned piece of wire, said reinforcing pieces having between them gaps occurring at the tips of said loops.

3. In a model airplane a wing frame structure consisting of a piece of bent wire of the full length required for the leading edge of both wings and for two loops extending rearwards from said leading edge, and pieces of reinforcing wire extending along, and joined to, said first mentioned piece of wire, said reinforcing pieces having between them gaps occurring at the tips of said loops and at the parts where said first mentioned wire is bent rearwards from the ends of said leading edge.

HUGO STEIFF.