

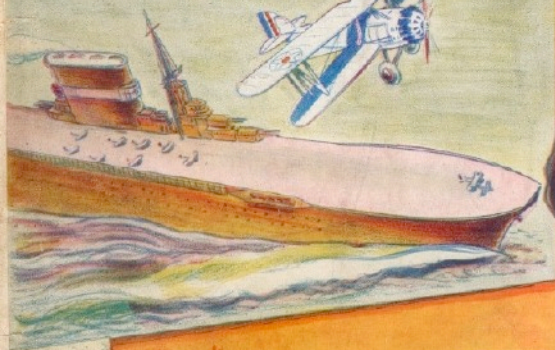
HOW TO BUILD

MODEL AIRPLANES

COMPLETE FULL SIZE PLANS AND DIRECTIONS
FOR A FLYING MODEL OF THE

VOUGHT CORSAIR

"THE PRIDE OF THE NAVY"



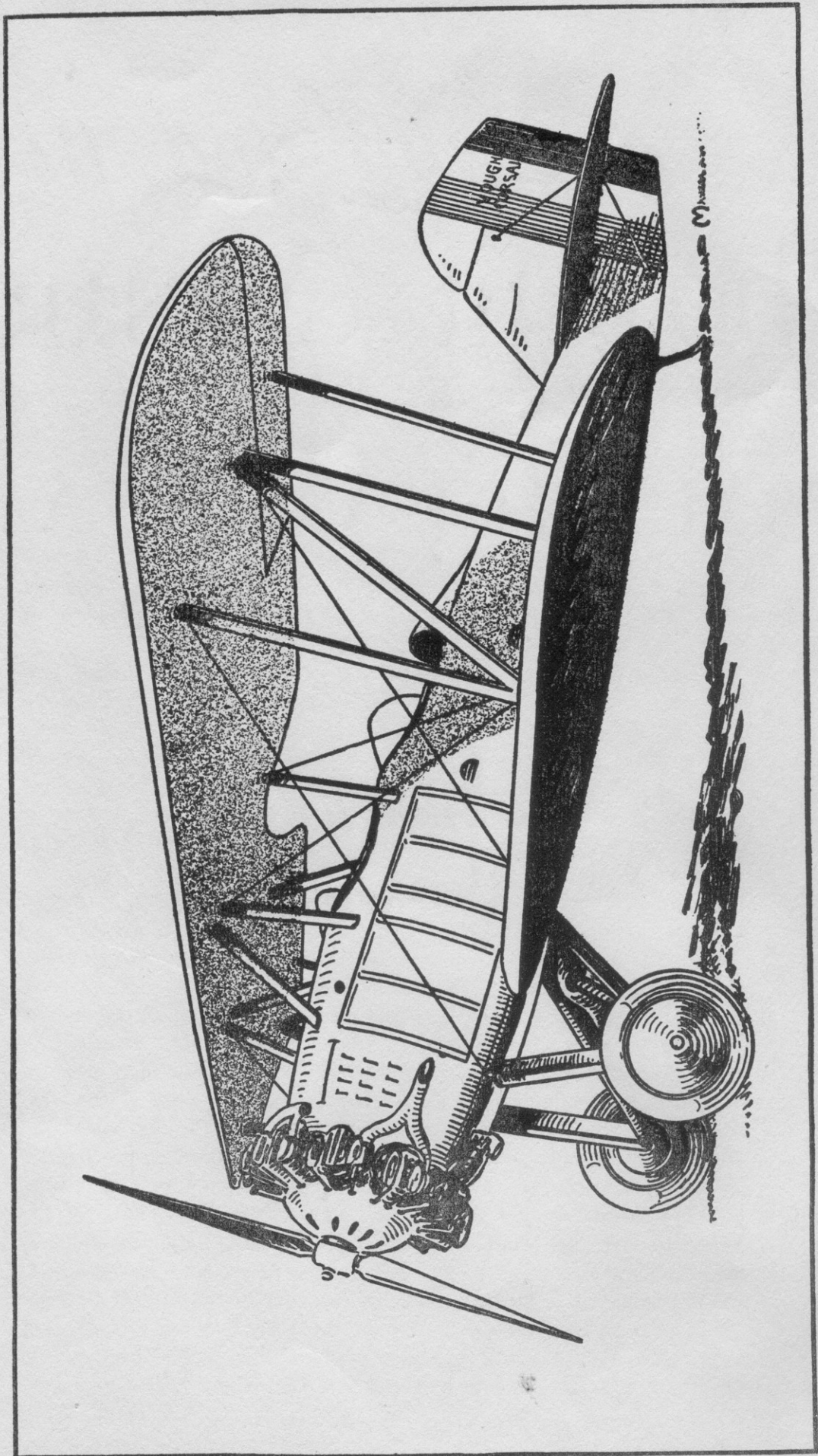
How to Build and Fly a
Vought-Corsair

By
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Edited By
LIEUT. E. STIERI



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Foreword

History of Chance Vought *American Pioneer Pilot and Designer* of the VOUGHT-CORSAIR

THE extraordinary history of Chance Vought as a consistent builder and designer of advanced types of airplanes is one of the brightest pages in the history of aviation.

The Vought organization was formed in 1917, and made a specialty of building military types of airplanes. Mr. Chance Vought, late head of the company that bears his name, was one of the country's pioneer pilots, having learned to fly in 1910 as a protégé of the Wright Brothers. He has since devoted his entire efforts to the advancement of the art. For many years Mr. Vought was actively engaged in flying, designing and building a number of highly successful airplanes, each well ahead of its day.

The first product of the Vought organization, brought out in 1918, was the Model VE7, which easily won the U. S. Army competition for training planes. The end of the War prevented the manufacture of large quantities of this replacement type, though many were built. The enduring quality of these first Voughts is shown by the fact that many of them are still in active service today. Models produced since the VE7 include the well known UO models which are standardized throughout the U. S. Naval Air Service for observation and kindred missions, including catapult and deck arresting activities. The Vought organization produced the first airplanes used for regular service on aircraft carriers and also the first airplanes for catapulting.

The latest Vought product, the CORSAIR (Model O2U), designed to meet the latest observation and fighting requirements, has officially shown itself to be the finest plane of its type in the world, and has captured four world seaplane records for the United States.

The popularity and reliability of the Vought airplanes are well indicated by their operating records in the United States Air Service. The Naval operating record has been held by Vought for many years.

The Vought Corsair is standard fighting equipment for the U. S. Navy, the U. S. Army, the U. S. Coast Guard, the Cuban Air Service, the Peruvian Air Service and many other countries. The U. S. Marine Corps used Corsairs in Nicaragua for observation and attack purposes.

How to Build the VOUGHT-CORSAIR

Pride of the UNITED STATES NAVY

By Thos. L. Bulger

THE Vought Corsair model, as described in this issue, is a real flying model of the airplane that is the Pride of the U. S. Navy and when completed is a real contest winner.

wing are made of 1/16" square Balsa Wood that slips into the slots that have been cut in the ribs for that purpose. Cement is used to hold it into place. The edges are then sandpapered to smooth out any rough surface. The 1/16" square Bamboo used on the upper wing is bent to shape by heating the Bamboo over a lighted candle. The upper wing is now complete and can be laid to one side to await covering and general assembly.

The lower wing panels are constructed in much the same manner as the upper wing, except that it is made in two sections as shown in drawing figs. 3 and 4. You will note in drawing fig. 4 how the main spars are allowed to overlap, so that they might be slipped into the wing mounts which later will be fastened to the fuselage of the plane.

After all the parts for the lower wing have been fastened into place, the wing framework is then set alongside the upper wing and left to dry.

Fuselage Construction

Before starting the construction of the fuselage, it will be best to go over the drawings of the fuselage as shown in fig. 5 and 6, and make notes of the various parts.

All set? Well then, let's get busy and cut out of the 1/16" sheet Balsa Wood, all the necessary fuselage formers numbers 1 to 6, as shown in drawing, fig. 9. After the formers have been cut, they should be laid out on the work bench in their correct positions as shown in drawing, figs. 5 and 6. Start cementing the Bamboo stringers from one former to the other until the fuselage takes shape; then cut out the cockpit formers as shown in drawing, fig. 7. The cockpit formers are then bent to the correct shape and cemented to the fuselage in two sections, as shown in drawing, fig. 5. Model making pins

Material

8 pcs.	1/16"	x	1/16"	x	36"	Balsa Wood
1 pc.	3/8"	x	1-3/8"	x	1-5/8"	Balsa Wood
1 sheet	1/16"	x	6"	x	36"	Balsa Wood
1 pc.	1/2"	x	1/2"	x	1"	Balsa Wood
1 pc.	1/8"	x	3/8"	x	3-9/16"	Balsa Wood
1 pc.	1/8"	x	3/8"	x	3-13/16"	Balsa Wood
2 pcs.	1/8"	x	3/8"	x	2-1/8"	Balsa Wood
1 pc.	1/8"	x	3/8"	x	2-1/4"	Balsa Wood
1 pc.	1"	x	1"	x	8"	Balsa Wood
2 pcs.	5/16"	x	5/16"	x	3/4"	Balsa Wood
2 pcs.	1/8"	x	3/16"	x	3-9/16"	Balsa Wood
2 pcs.	1/8"	x	3/16"	x	4-5/16"	Balsa Wood
2 pcs.	1/8"	x	3/16"	x	5-5/16"	Balsa Wood
2 pcs.	1/32"	x	2"	x	6"	Balsa Wood
1 pc.	3/8"	x	1-5/8"	x	1-5/8"	Balsa Wood
4 pcs.	1/8"	x	36"			Birch Dowel
4 pcs.	1/16"	x	1/4"	x	15"	Bamboo
1 pc.	1/16"	x	6"			Round Reed
1 pr.	1-3/8"					Celluloid Wheels
1						Celluloid Motor
1 pc.	2"	x	2"			Sheet Celluloid
2 ft.	No. 14		Music Wire			
2 ozs.	Ambroid		Cement			
2 ozs.	Banana		Oil			
2 ozs.	Plain or Colored		Dope			
20 ft.	1/8		flat rubber strand			
1	Hanger		Bearing			
2	Copper		Washers			
	Japanese		Hakone Tissue			

General Wing Construction

To start the wing construction of the Corsair model we must first cut to shape all the necessary wing ribs for the upper and lower wing panels. The wing rib drawings are shown in figs. 2 and 4. These ribs are all cut from 1/16" sheet Balsa Wood. All necessary holes are drilled in the ribs for the main spars, etc. After all ribs have been cut and shaped the main spars of 1/8" Birch Dowel are set into place and the ribs spaced in their correct positions as shown in drawing fig. 1 and 2. Ambroid cement is then used to fasten these ribs to the main spars.

The leading and trailing edges of the upper

should be used to hold the formers in place while cement is drying.

The wind shield is made of celluloid sheet and is shown in detail in drawing, fig. 6. The gun ring support and ring mount are shown in drawing, fig. 2 and are made of Balsa Wood and 1/16" reed. Cement is used to fasten the gun mount to the fuselage. 1/16" square Bamboo is used for the tail skid as shown in drawing, fig. 6 and is cemented to the fuselage. The tail block is shaped from a Balsa block 1/4" wide, as shown in drawing, fig. 9. The only manufactured part on the whole model is the celluloid motor and wheels which can be obtained from any model airplane supply club or store.

Landing Gear

The landing gear must now be constructed. To start doing this, we must make the landing gear struts as shown in drawing, fig. 8, from the 1/8" x 3/16" Balsa wood. Use Balsa streamline blocks for the cross struts A and B which are then cut to the correct size and sandpapered and the entire landing gear is ready to assemble and fasten to the fuselage. The assembly of the landing gear is shown in drawing, fig. 8, 1 3/8 celluloid wheels being used with small pins for axles.

The Elevator

The elevator is constructed from 1/16" Balsa ribs cut to the correct shape as shown in drawing, fig. 7, (make four of these ribs). A 1/8" Birch dowel, 8 1/2" long is used for the spar by inserting same through the four ribs and fastening with cement. The leading and trailing edges consist of 1/16" x 1/16" square Balsa wood, with 1/16" square Bamboo tips. The elevator is then cemented to the fuselage in the regular position.

Rudder

The rudder ribs are cut to shape, 1/16" x 1/4" x 3 3/4" and 1/16" x 1/4" x 2 3/4", as shown in drawing, fig. 6. 1/16" Bamboo is used to shape the rudder edges with rib braces of 1/16" x 5/32" x 1 1/2" Balsa wood. When the rudder is completed, it is to be cemented to the elevator and tail block. Model pins should be used to hold elevator and rudder in place while cement is drying.

Motor Stick and Nose Block

The motor stick consists of a piece of 3/16" x 1/4" Spruce or hard Balsa wood, to which is fastened the rear motor hook, allowing 1 1/8" of the motor stick for insertion into former No. 6, (see drawing fig. 6). The nose block is shaped from a Balsa wood block 3/8" x 1 5/8" x 1 5/8", and then sandpapered smooth.

You will note that the motor stick is inserted in the nose block and fastened with cement in a position to allow the hanger bearing to match up with the drill hole in the nose block. The propeller shaft is later inserted through this drill hole and through the hanger bearing. The small bushing is of the same type as that used for the celluloid wheels.

The entire ship is then covered with Japanese Hakone silk tissue. Banana oil is used as an adhesive to stick tissue to the framework. After the ship has been completely covered, it should be doped with either plain or colored dopes to tighten tissue and dress the model for exhibition purposes.

The imitation twin Lewis machine guns shown in drawing, fig. 9, are made of Balsa wood, reed and two pieces of Birch dowel. When guns are completed, cement them to the machine gun ring and mount.

1/8" flat rubber strand is used for motive power. For the 8" flying propeller, 150 turns will give you enough power to fly the model off the ground. The imitation standard steel propeller is only used for scale model exhibition purposes.

Flying Adjustments

After the Corsair is completely assembled, it should be tested by gliding until a perfect glide of about six feet has been obtained. The model can then be wound up by releasing the motor stick and having one boy hold the propeller end. You can start winding the motor with your winder. Should the model stall, weight should be added to the nose until model flies perfect.

The correct way to launch a model is from a rise off the ground position using the left hand to hold the propeller and the right hand to hold the rudder.

The model should roll for about ten feet before taking off into the wind.

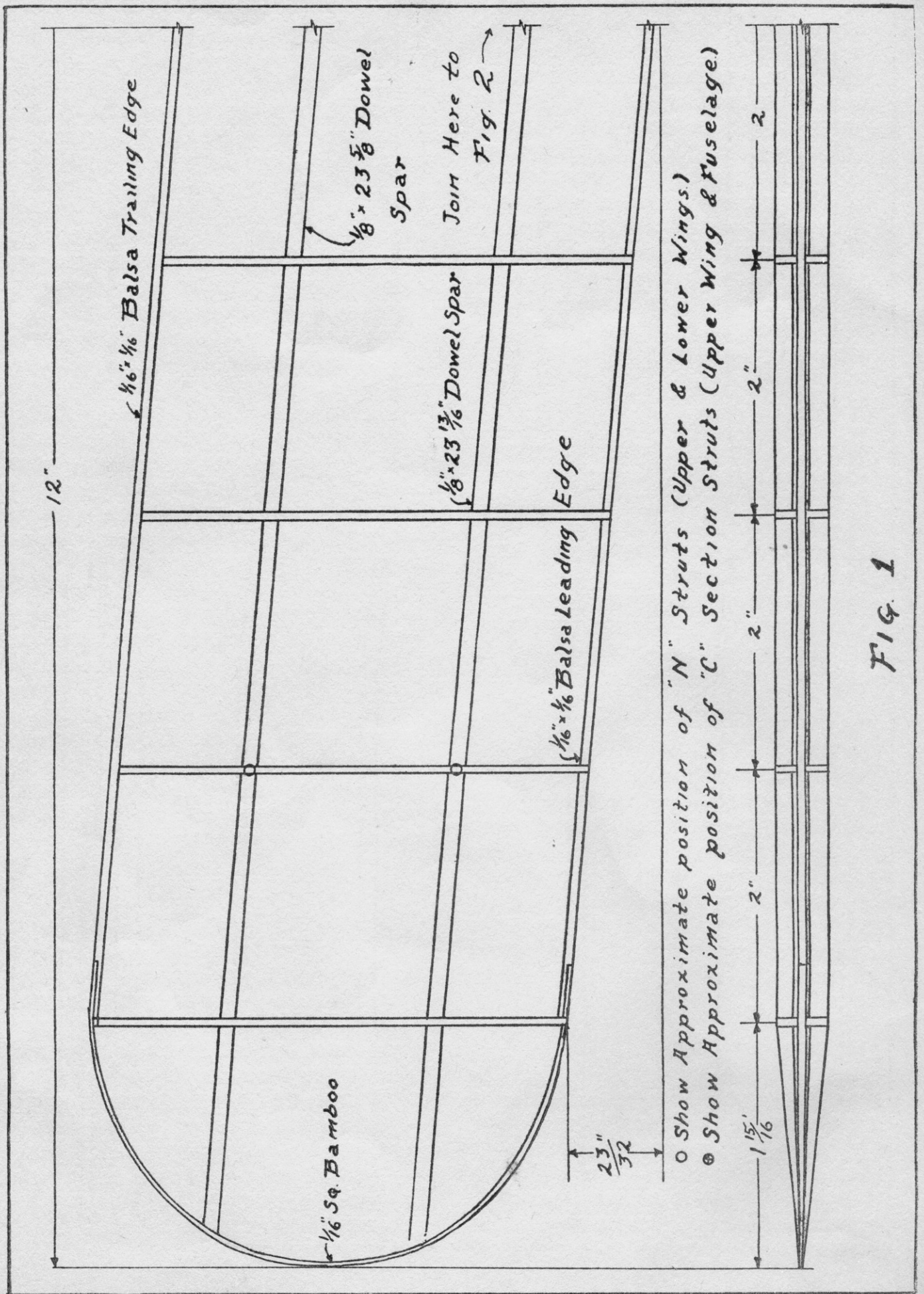


FIG. 1

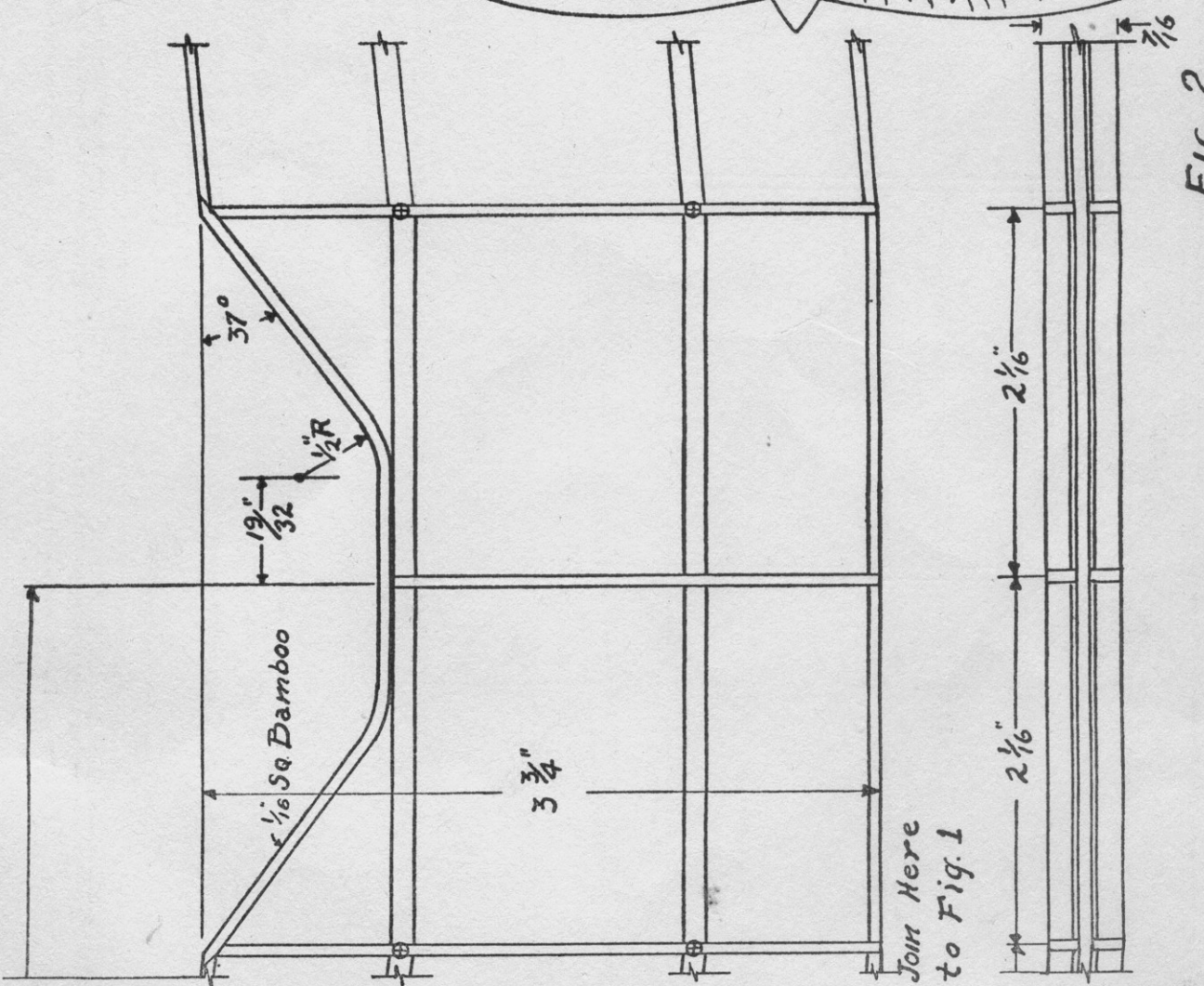
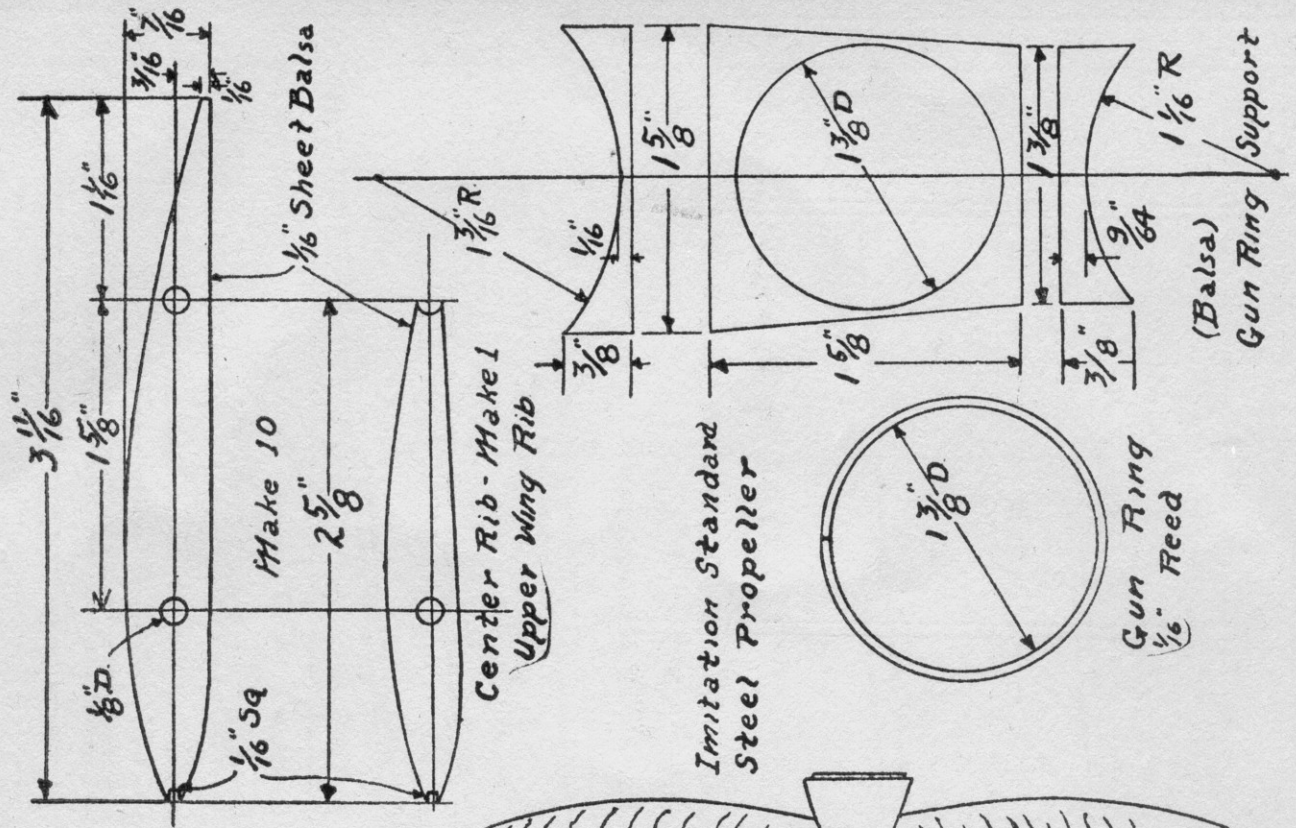
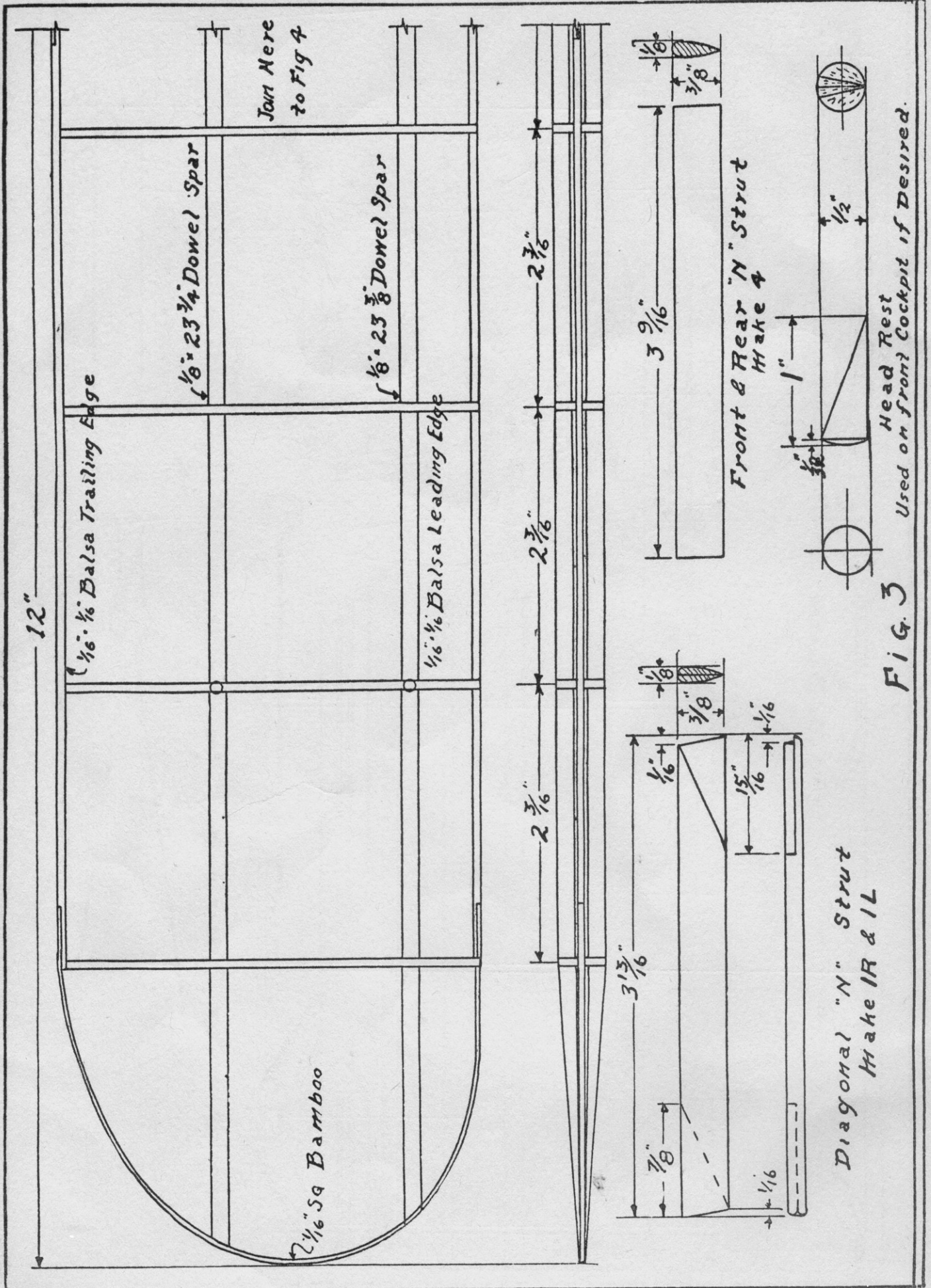
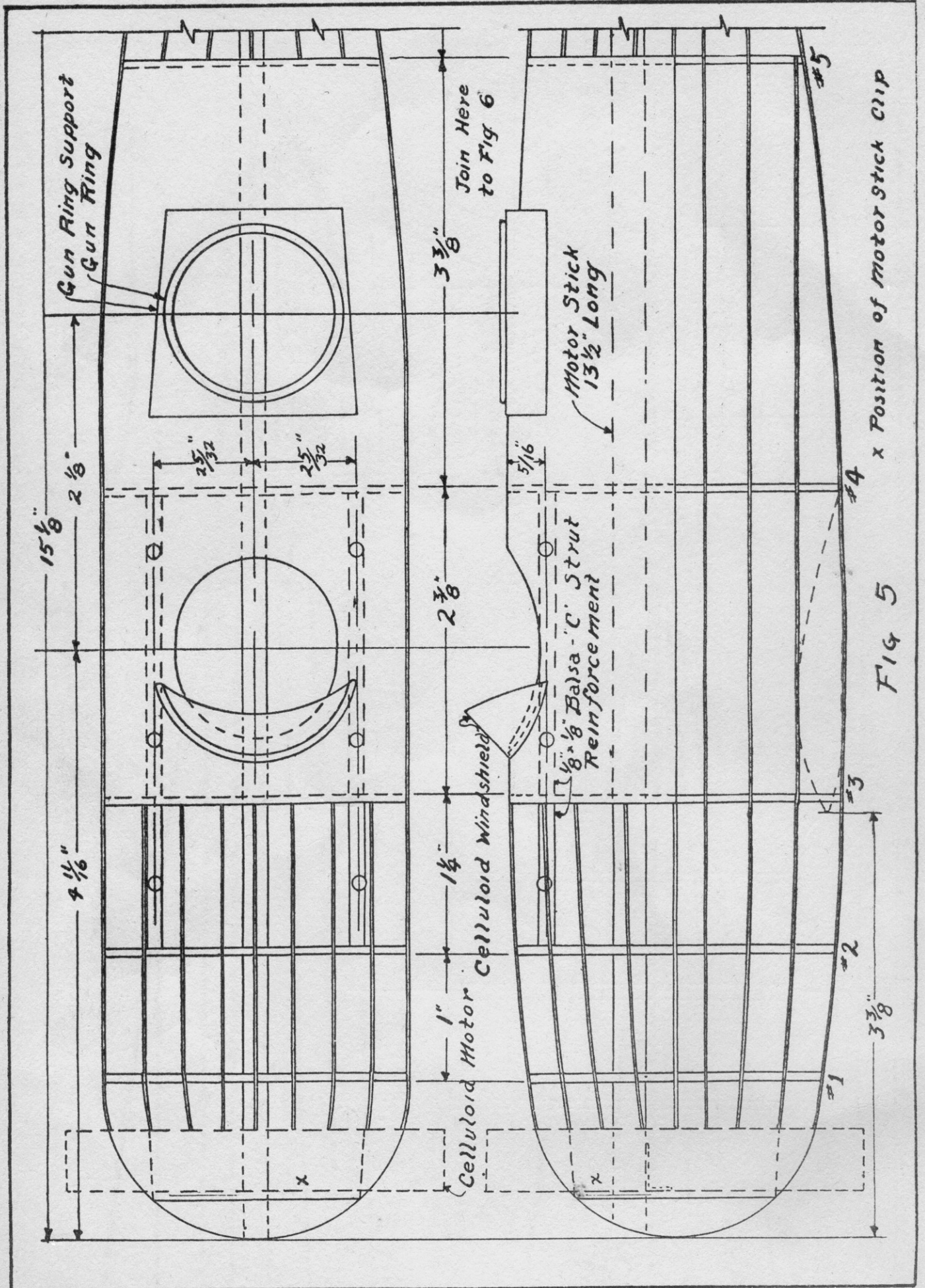
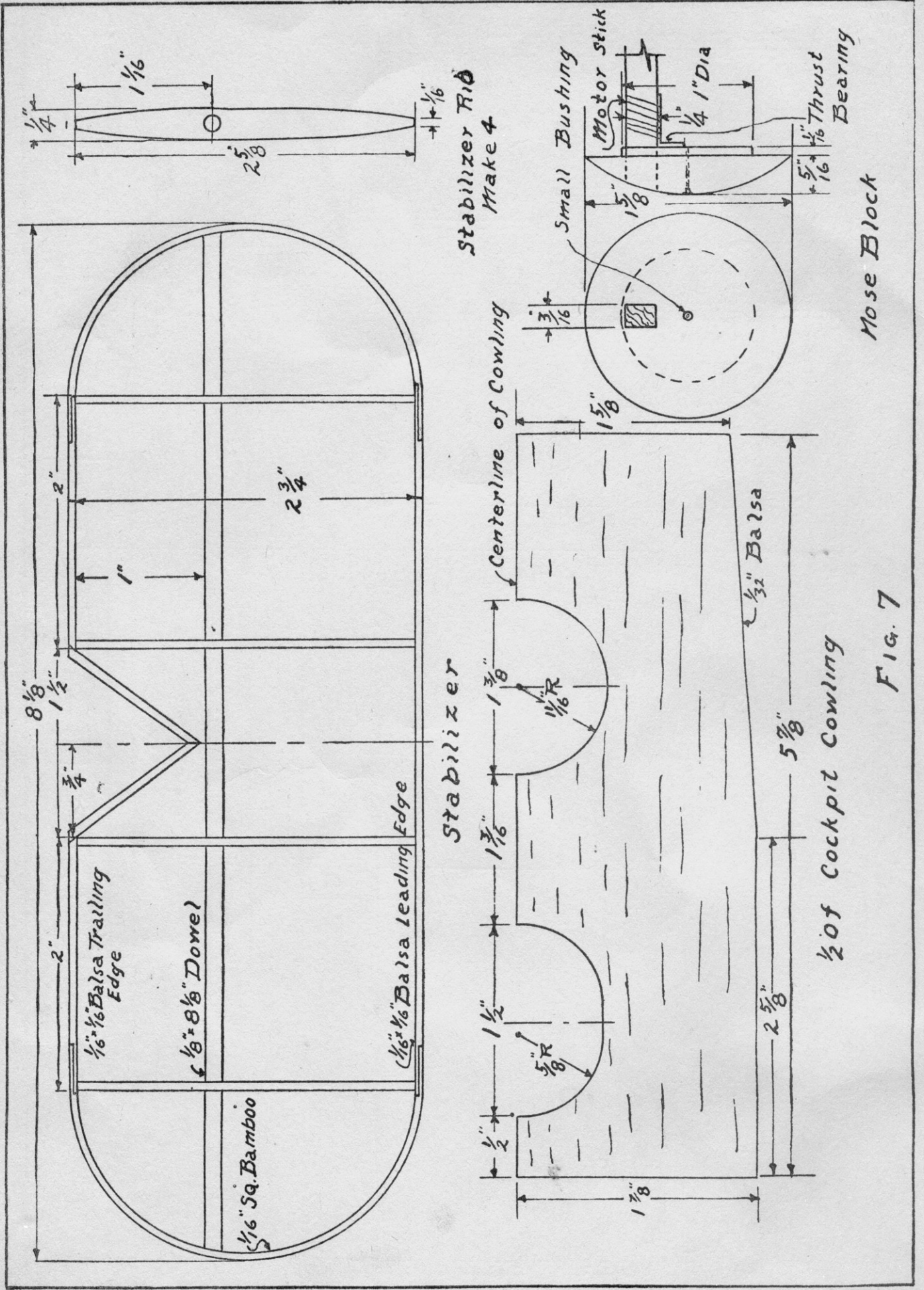


FIG 2







Stabilizer Rib
Make 4

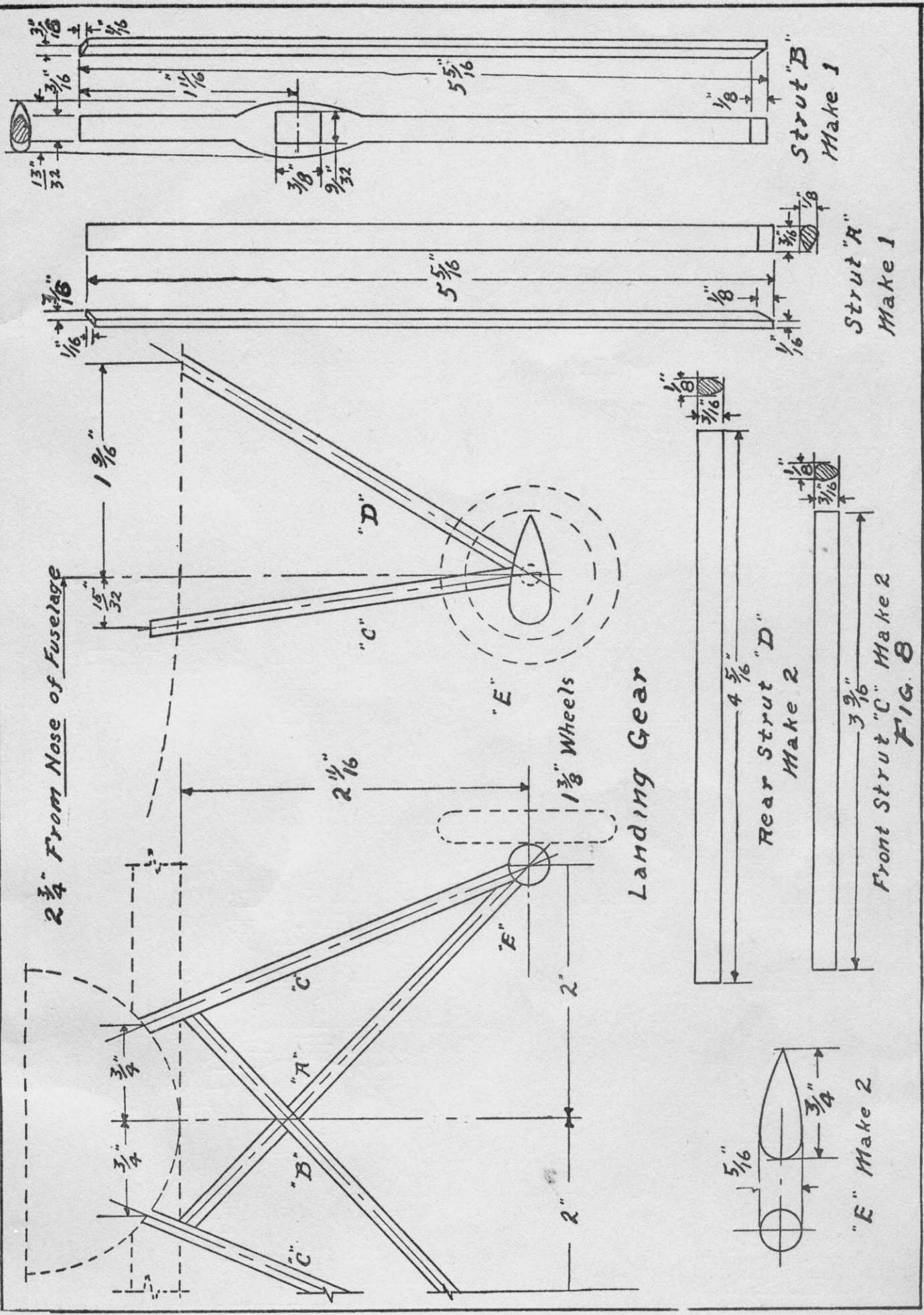
Centerline of Cowling

Stabilizer

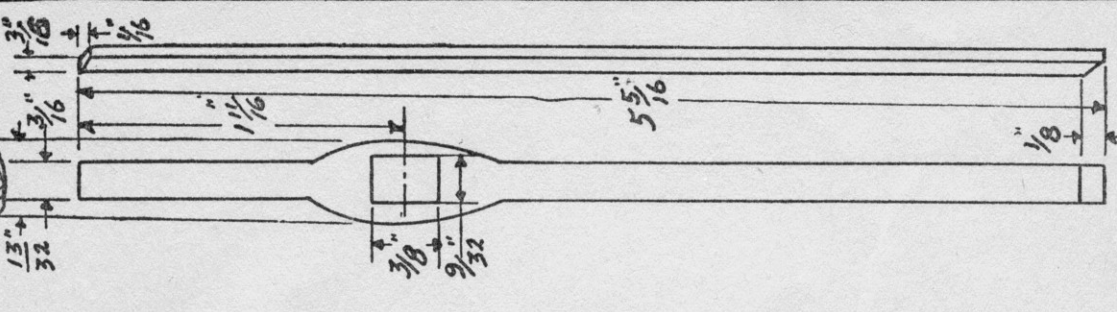
$\frac{1}{2}$ of Cockpit Cowling

Nose Block

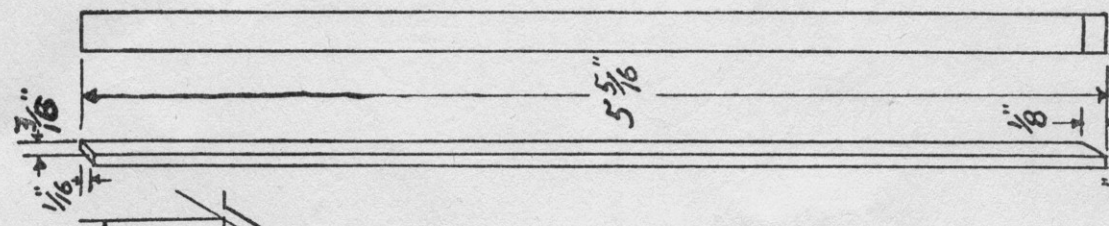
FIG. 7



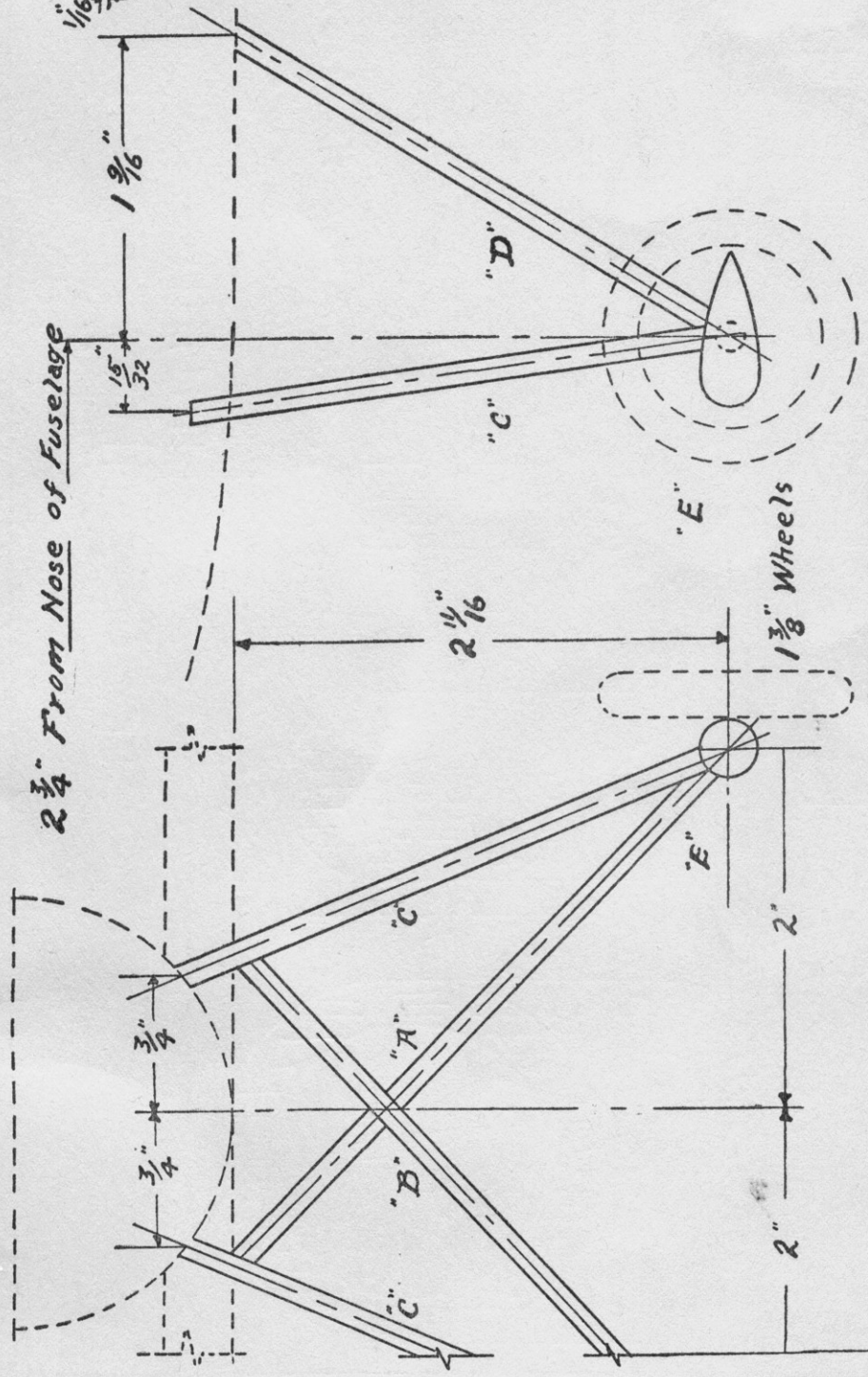
2 3/4" From Nose of Fuselage



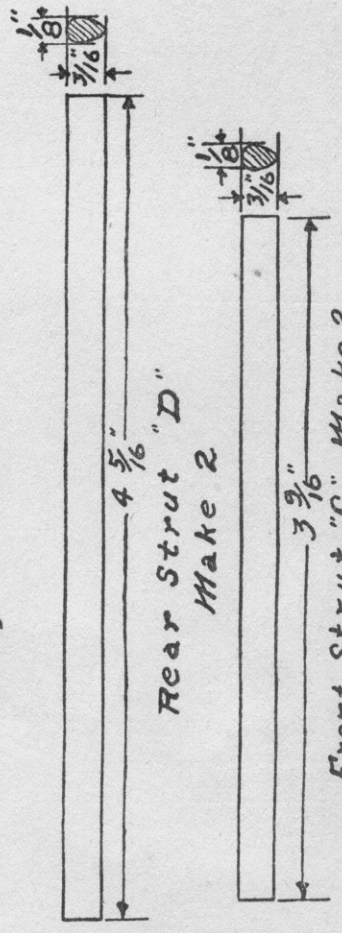
Strut "B"
Make 1



Strut "R"
Make 1

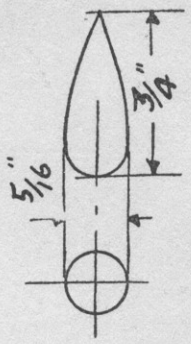


Landing Gear



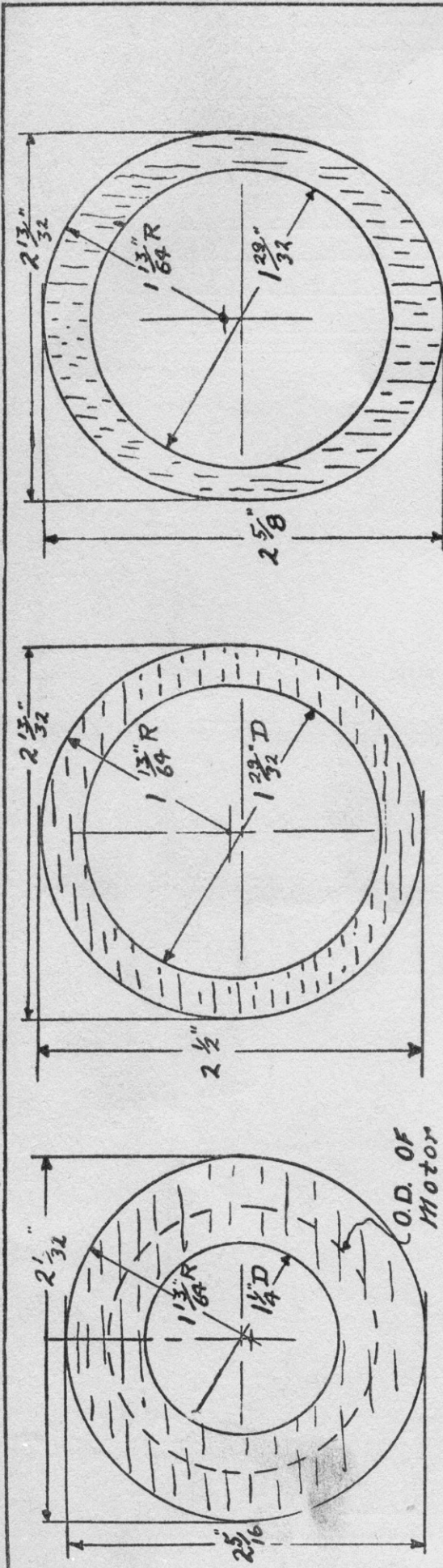
Rear Strut "D"
Make 2

Front Strut "C"
Make 2



"E" Make 2

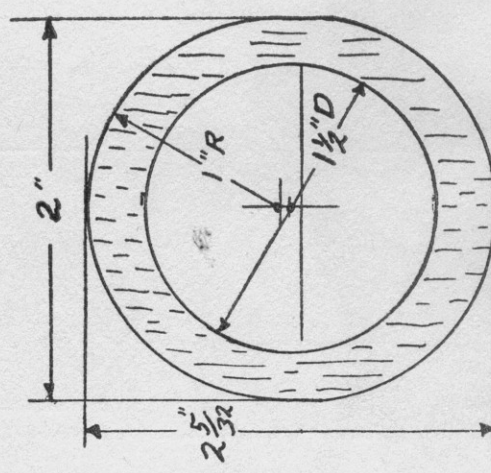
FIG. 8



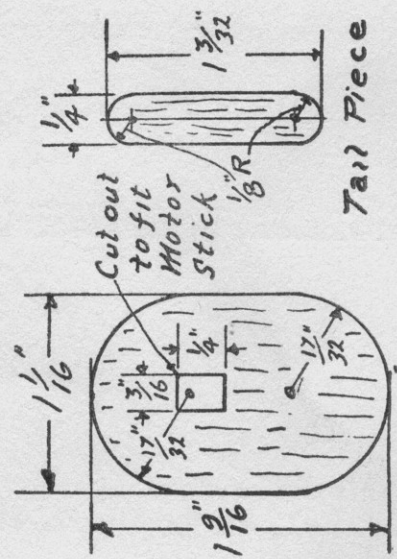
C.O.D. OF Motor

Former No 2.

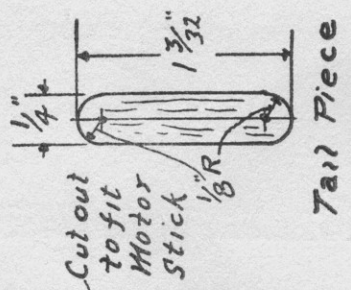
Formers No 3 & 4.



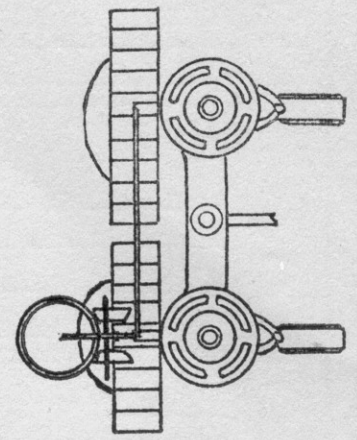
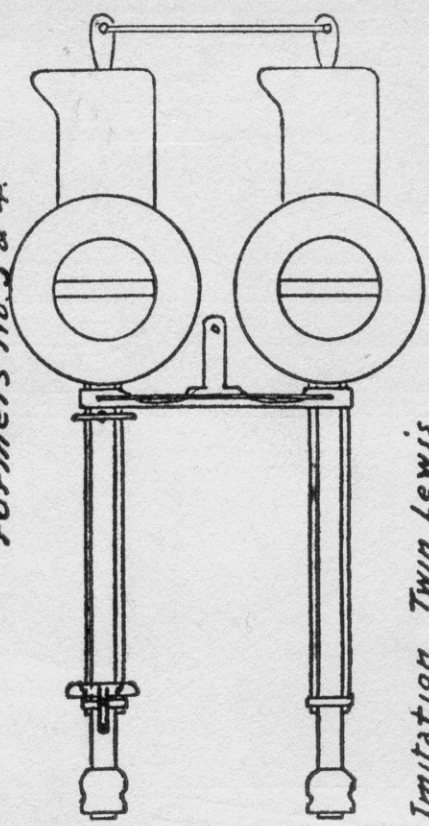
Former No 5



Former No 6



Cut out to fit Motor Stick



Machine Guns.

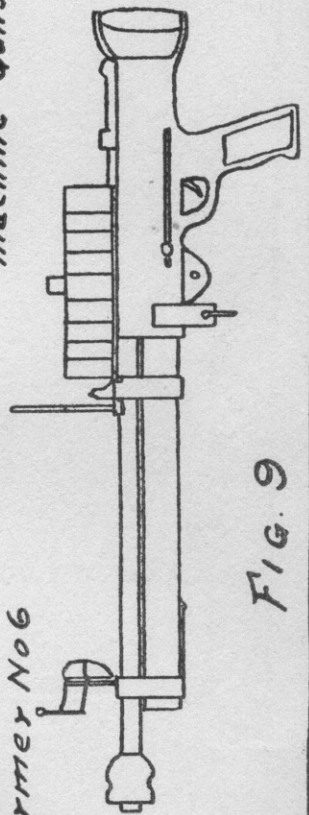


FIG. 9

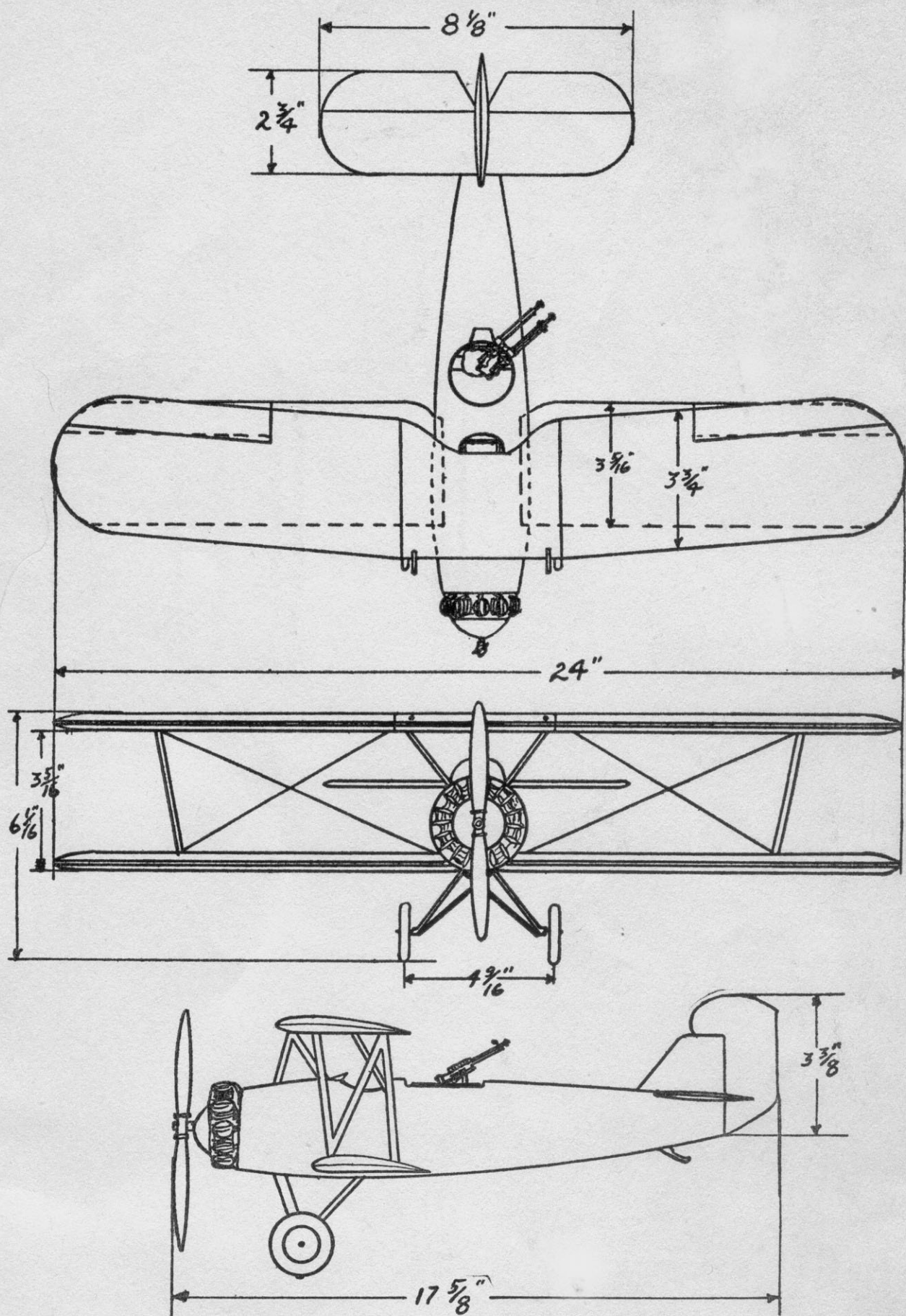


Fig. 10