May 6, 1924. 1,492,952

E. G. BAHL

FUSELAGE FORM

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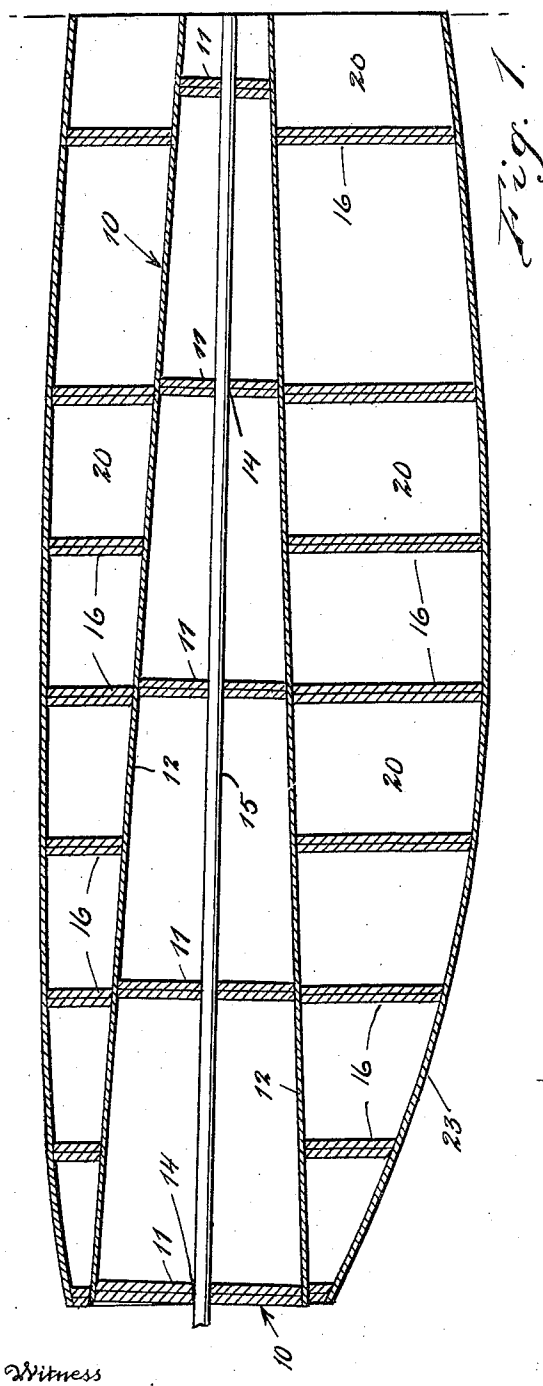

Fig. 1.

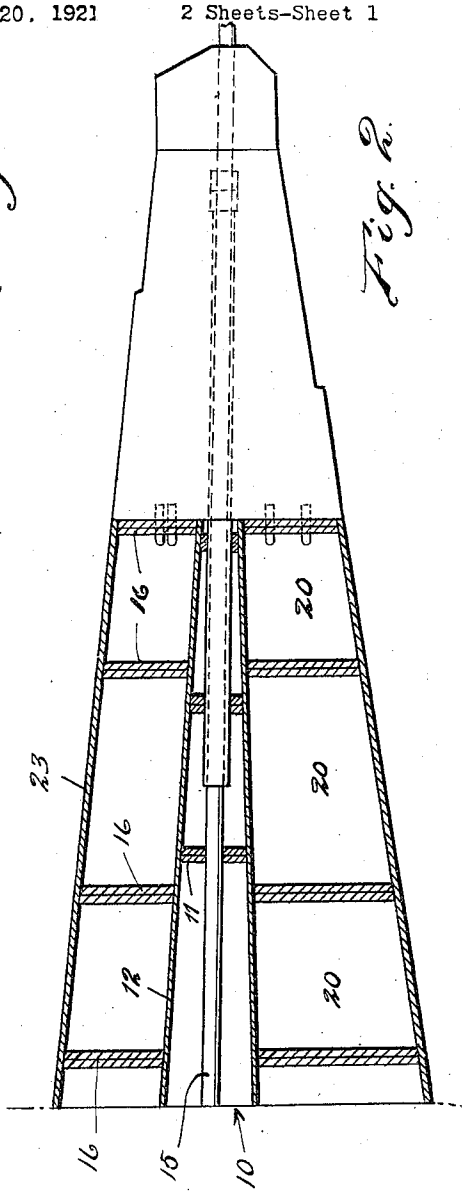

Fig. 2.

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Fig. 4.

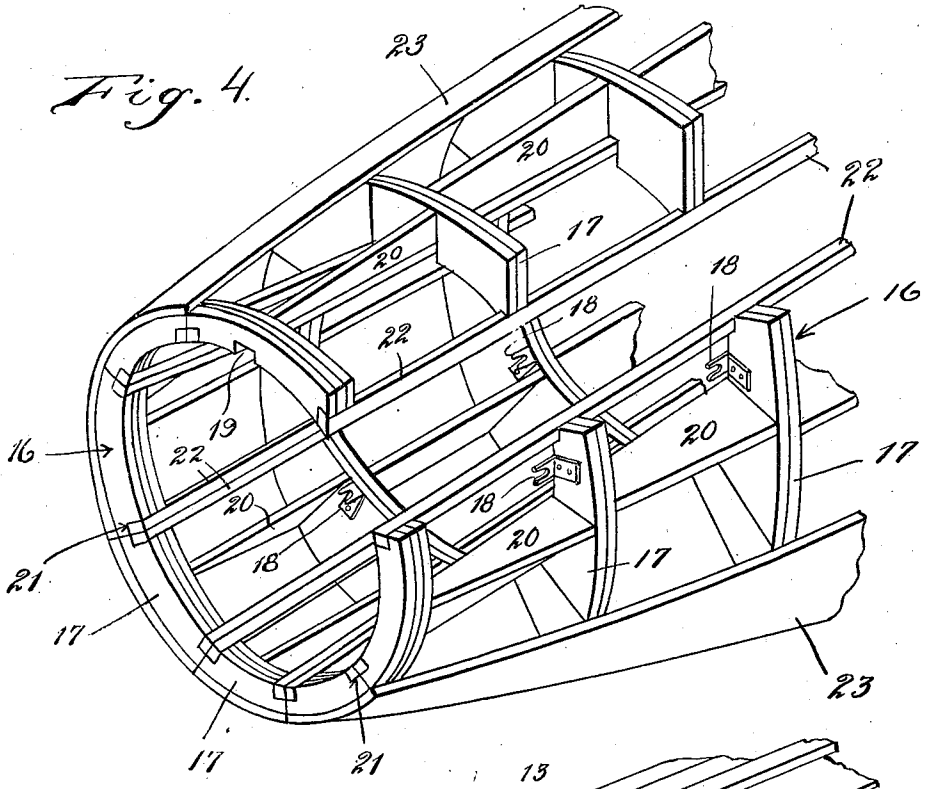
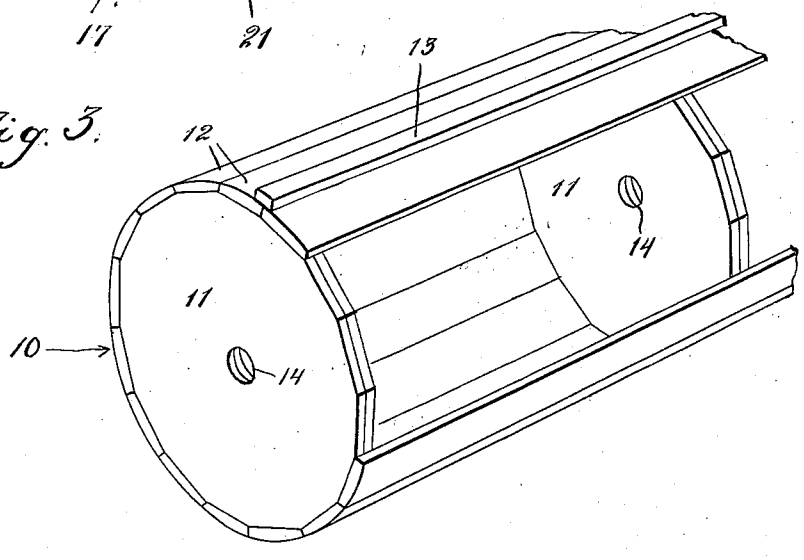


Fig. 3.



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UNITED STATES PATENT OFFICE.

ERROLD G. BAHL, OF LINCOLN, NEBRASKA.

FUSELAGE FORM.

Application filed December 20, 1921. Serial No. 523,737.

To all whom it may concern:

Be it known that I, ERROLD G. BAHL, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented new and useful Improvements in Fuselage Forms, of which the following is a specification.

This invention relates to aeroplane construction, particularly to the construction of the fuselage or body, and has for its object the provision of a novel collapsible form assembled upon a withdrawable core, the fuselage being built upon the form which is subsequently collapsed when the core is removed, to permit the form to be disassociated from the completed fuselage.

An important and more specific object is the provision of a series of outline sections which are assembled upon the removable core and held thereon by catches, these sections being held in proper spaced relation by reinforcing boards and the sections at their division lines being recessed for the accommodation of bearing strips.

An additional object is the provision of a form of this character which will be simple and inexpensive in construction, highly efficient in use, durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which—

Figure 1 is a longitudinal sectional view through the forward end of my form and core and showing a fuselage built thereon.

Figure 2 is a similar view through the rear end, that is showing the remainder of the complete device,

Figure 3 is a perspective view of the forward end of the core with a part of the covering thereof removed, and

Figure 4 is a perspective view of the forward end of the form showing a section thereof removed.

Referring more particularly to the drawings, the numeral 10 designates a core which is tapered throughout its length and which is frusto-conical in shape. This core consists of a plurality of heads or partitions 11 which are polygonal, as shown. The core furthermore includes longitudinally extending covering strips 12 which are secured to the corresponding faces of the polygonal partitions and which are then dressed to the correct size and shape. These strips are glued in place and are additionally secured by means of suitable screws. After this core is completed I provide a key strip 13 which is suitably secured throughout the length of the core by any suitable means. All the partitions 11 are formed with central holes 14 for the passage of a suitable shaft or rod 15 whereby the core is mounted for rotation.

Form members are built upon this core and include a plurality of spaced ring-like outline members 16, each of these members being formed of a plurality of similar sections 17 arranged in end to end relation. These sections are shown to be laminated for greater strength. All the members 16 may be arranged in spaced relation upon the core 10 with the openings in the successive members 16 varying in diameter for conforming engagement upon the different points in the length of the core, as will be obvious. Secured upon the members 16 are catches 18 with which are engaged suitable screws screwed into the core at the proper points whereby the members 16 will be properly supported. Certain of the sections 17 of the successive members 16 are formed at their inner edges with recesses 19 for the accommodation of the key-strip 13 of the core so that relative rotation of the members 16 upon the core will be prevented.

I also make use of a plurality of reinforcing boards 20 which extend between the successive members 16 and which vary in width throughout their lengths, as clearly shown in Figure 4 whereby each end of each board 20 will be of the same width as the portion of the adjacent member 16 carried by the core or removably mounted thereon. These boards 20 are permanently secured to the sections 17 with which they are associated, by any suitable means.

At the division lines between the sections 17, the sections are recessed, as shown at 21, for the reception of bearing strips 22 which are permanently secured to the associated sections. The sections are covered on the outside by boards or strips 23 permanently secured thereon. In this way it will be seen that the form consists of eight separate or distinct but similar longitudinally extending sections, one of which constitutes a key for all the others.

Assuming that the form has been built up

on the core, as shown in the drawings, the fuselage is built on the form and it should be understood that the fuselage might consist of strips of any desired arrangement suitably secured, as for example in accordance with the process disclosed in my patent No. 1,424,066. After the fuselage is built, the core is removed, whereupon the removable key section of the form will drop down to the place previously occupied by the core, and is then removed by pulling it out. Subsequently to this the other sections are disassembled and withdrawn.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simply constructed form for the construction of an aeroplane fuselage, the form being collapsible upon the withdrawal of the conical core so that the operation of cutting into sections may be readily performed.

While I have shown and described the preferred embodiment of my invention, it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A form for building aeroplane fuselages comprising a tapered core, a plurality of similar longitudinally extending sections detachably engaged upon the core, each of said sections including a plurality of arcuate ribs connected at their ends by longitudinal strips recessed into their inner peripheries whereby the strips and inner peripheries of the sections will lie snugly against the core, and securing brackets on the ribs adapted to be secured to the core.

2. A form for building aeroplane fuselages consisting of a tapered core, a plurality of similar longitudinally extending sections detachably engaged upon the core, and one of said sections constituting the key section for holding all of the sections in edge to edge relation upon the core, each of said sections consisting of curved rib members provided on their inner peripheries at their ends with recesses, longitudinally extending strips engaged within the recesses and flush with the ends of the sections, and a sheathing secured to the sections and forming a cover.

3. A form for building aeroplane fuselages consisting of a tapered core, a plurality of similar longitudinally extending sections detachably engaged upon the core, and one of said sections constituting the key section for holding all of the sections in edge to edge relation upon the core, each of said sections consisting of curved rib members connected by longitudinal elements, and covered with sheathing secured to their outer edges, and means mounted on said rib members and engageable with means on the core for holding the sections in places.

4. A form for building aeroplane fuselages consisting of a tapered core, a plurality of similar longitudinally extending sections detachably engaged upon the core, and one of said sections constituting the key section for holding all of the sections in edge to edge relation upon the core, each of said sections consisting of a plurality of arcuate ribs connected at their ends by longitudinal strips and held in spaced relation by other longitudinal members secured to the successive ribs, sheathing covering the outside of each section and secured to the outer edges of said ribs, and securing members carried by the ribs and adapted to be secured to the core.

In testimony whereof I hereto affix my signature.

ERROLD G. BAHL.