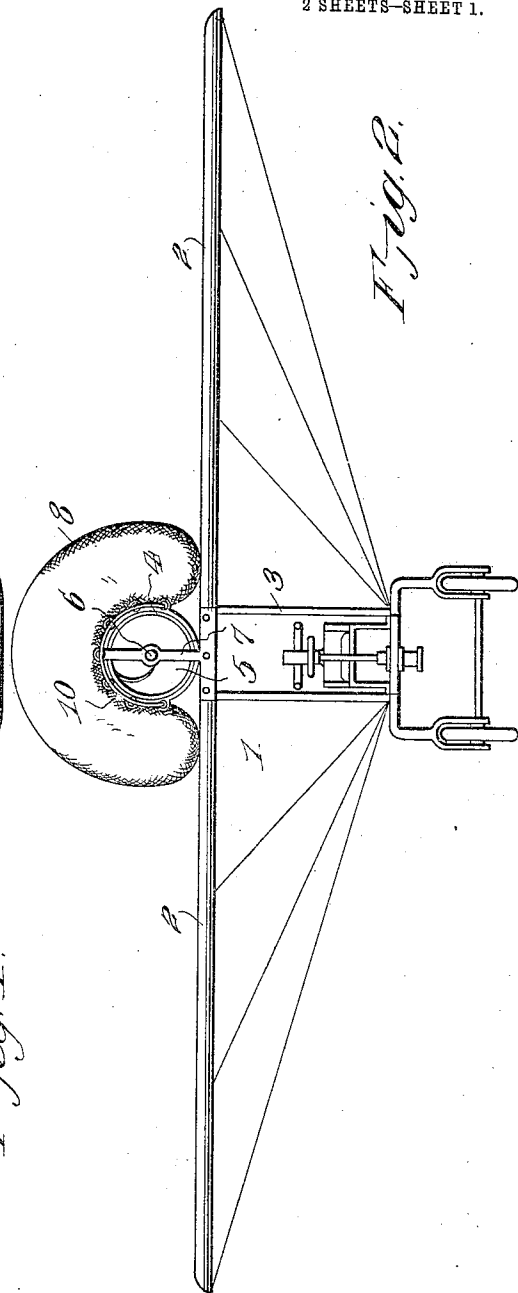
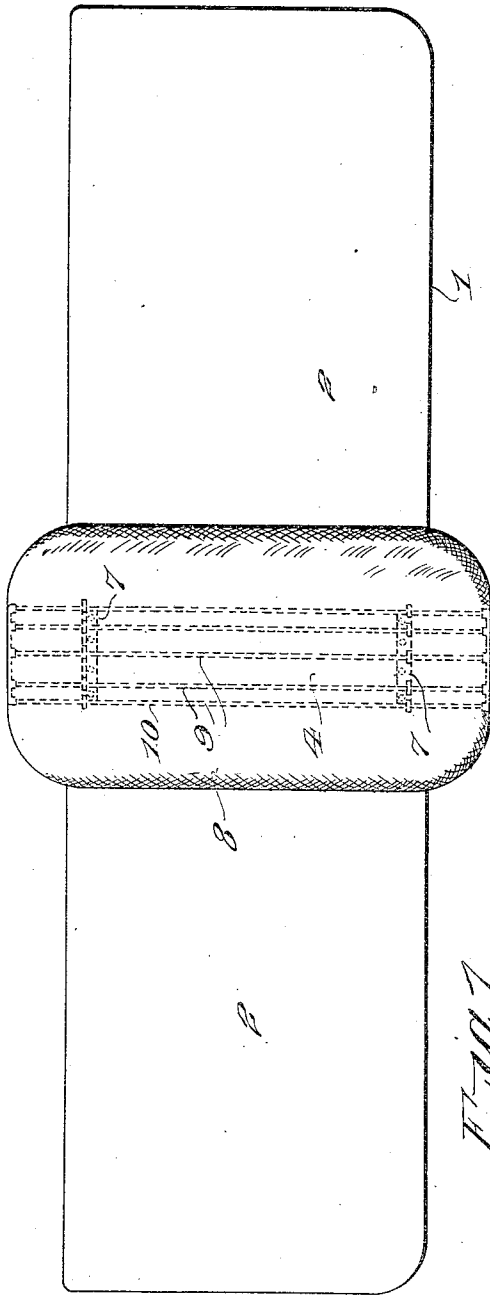


O. GAUL.
SAFETY APPLIANCE FOR AIR CRAFT.
APPLICATION FILED NOV. 11, 1911.

1,049,075.

Patented Dec. 31, 1912.
2 SHEETS—SHEET 1.



Witnesses
Frank Hough

C. C. Hines.

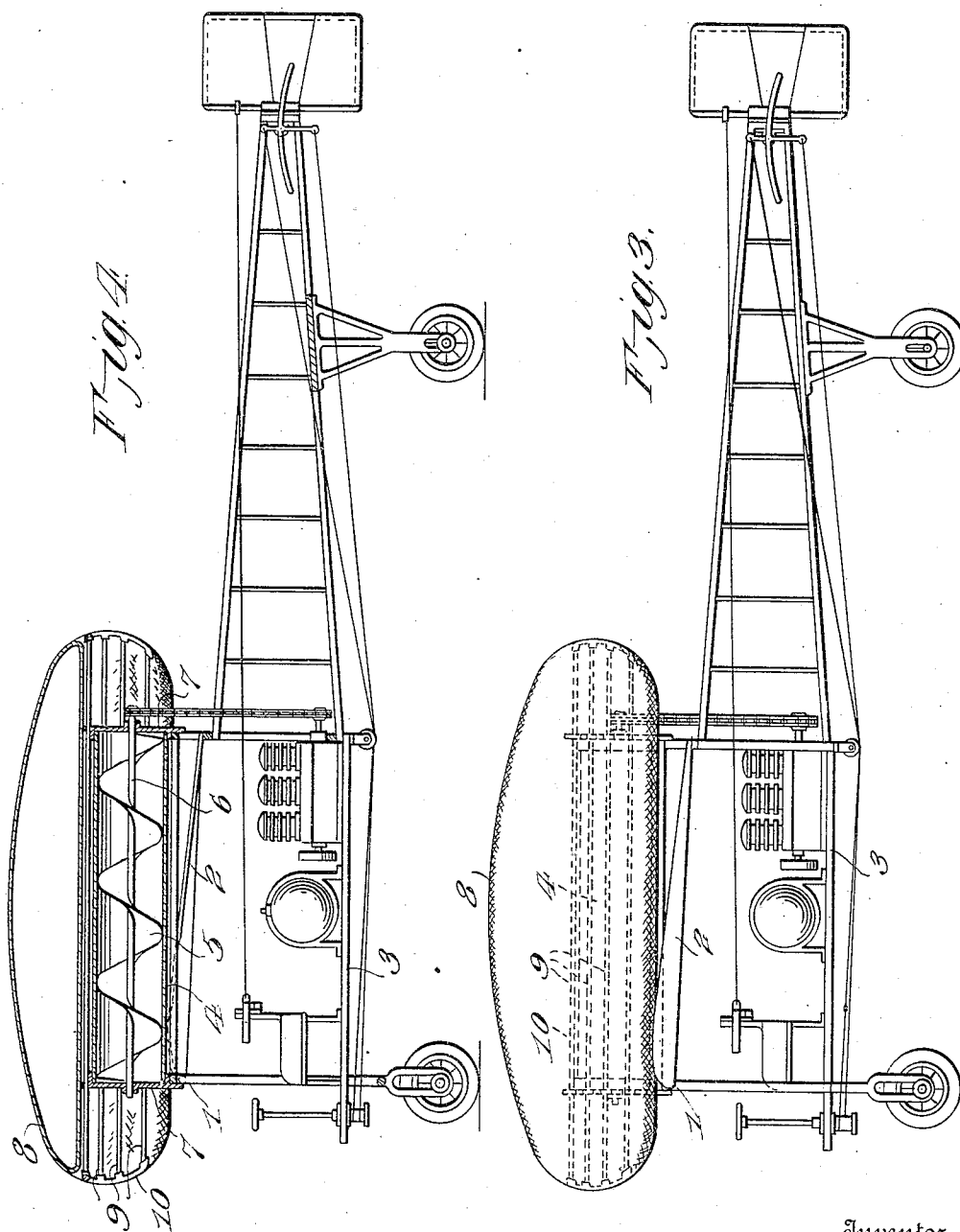
Inventor
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UNITED STATES PATENT OFFICE.

OSCAR GAUL, OF CHICAGO, ILLINOIS.

SAFETY APPLIANCE FOR AIR-CRAFT.

1,049,075.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed November 11, 1911. Serial No. 659,699.

To all whom it may concern:

Be it known that I, OSCAR GAUL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Safety Appliances for Air-Craft, of which the following is a specification.

This invention relates to safety appliances for air craft, and particularly to means for increasing the buoyancy of such craft, and insuring safety and easy descent to the ground in the event of damage to the vehicle or stoppage of the motor.

The object of the invention is to provide a novel construction and relative arrangement of propeller, propelling housing and aerostat, whereby provision is made for supporting the aerostat in an effective manner, and an efficient type of aerostat is provided to increase the buoyancy and lifting power of the machine, as well as to enable a safe descent to be made when danger arises.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a top plan view of a supporting surface of a flying machine, showing the application of my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a side elevation. Fig. 4 is a vertical longitudinal section.

Referring to the drawings, 1 designates a portion of the main frame of a flying machine, from the center of which extend lateral wings 2 forming the supporting surface. Mounted beneath the center of the frame 1 on a line between the inner ends of the wings 2 is a bed or frame 3 to support the driving motor. Arranged upon the top of the supporting surface is a longitudinally extending, cylindrical drum or casing 4, which forms a housing or inclosure for a spiral bladed propeller 5 mounted upon the shaft 6 suitably driven from the motor and journaled at its ends in cross bars or spiders 7 at the ends of the drum. The drum serves to protect the propeller from injury and at the same time forms an air channel lying parallel with the line of flight, within which a body of air is adapted to be temporarily confined

for the action of the blades of the propeller thereon, whereby a maximum thrust is obtained and an increased working efficiency secured.

Enveloping the upper portion and sides 60 of the casing or drum 4 is an aerostat 8 which is composed of an expansible and collapsible body of balloon silk or other suitable fabric, the inner wall of which is secured to the bars 9 of a supporting frame 65 structure 10 fastened to the periphery of the drum. The collapsible and expansible body is thus secured in position to the drum and is protected by the latter from possible injury from the propeller. The aerostat 70 is preferably coextensive in length with the fore and aft width of the supporting surface, and the frame 10 extends beyond the ends of the drum to give said aerostat proper stability. 75

It will be observed that by this structure a substantially inverted U-shaped aerostat is provided which is reinforced from the drum to resist air pressures and is arranged at a proper point to sustain the 80 whole or the greater portion of the weight of the machine, whereby the buoyancy of the machine is increased, as well as its lifting power. If from any cause the wing structure should be damaged or the propeller rendered inoperative at any time in the flight of the machine, the latter will be sustained sufficiently by the aerostat to adapt it to be controlled and to descend safely and easily to the ground. 90

Having thus described the invention, what I claim as new is:

1. A flying machine including a main frame, a supporting surface carried thereby, and embodying laterally extending 95 wings, a longitudinally extending drum or cylinder mounted upon said supporting surface above the main frame and between the wings, a propeller operating in said drum or cylinder, and a substantially inverted U-shaped aerostat partially surrounding said cylinder and resting upon the adjacent portions of the wings.

2. A flying machine comprising a main frame, a supporting surface carried thereby and including laterally extending wings, a drum or cylinder extending longitudinally across the supporting surface above the main frame and between the wings, a shaft journaled in the ends of said drum or 110

cylinder, a motor carried by the main
frame, gearing between said shaft and the
motor, a spirally bladed propeller mounted
on said shaft and operating in said drum or
5 cylinder, and a substantially U-shaped in-
verted aerostat partially surrounding said
drum or cylinder and extending beyond the
front and rear edges of the supporting sur-

faces and resting upon the adjacent por-
tions of the wings. 10

In testimony whereof I affix my signature
in presence of two witnesses.

OSCAR GAUL.

Witnesses:

ROBERT KIRCHNER,
WALTER R. KOERNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."