This invention relates to aeroplanes particularly intended for long distance flights over
the water and which are not provided with
permanent float or boat-like bodies, and my
object is to devise means for quickly in-
creasing the buoyancy of the aeroplane, in
case of a forced descent over water, to an
extent sufficient to support both-aeroplane
and crew.

I attain my object by locating within a nor-
mal part of the structure a frame which may
be extended in case of need outside the struc-
ture, and which carries an inflatable air bag,
and by providing means whereby the air
bag when so projected may be inflated. Pref-
errably such a safety device is located in each
wing tip of a monoplane or in the lower wing
tips of a bi-plane.

The invention is hereinafter more fully
described and is illustrated in the accompa-
nying drawings in which

Fig. 1 is a plan view, partly broken away,
and more or less diagrammatic, of a mono-
plane provided with my safety attachment;

Fig. 2 a front elevation of part of the same;

and

Fig. 3 a detail of the operating mechanism.

In the drawings like numerals of reference
indicate corresponding parts in the different
figures.

The drawings show a monoplane of known
type and require no description in detail.

Within each wing tip of the plane there is
provided a chamber. In each chamber is
fitted a frame 2 adapted to slide on the guides
3 so that it may be projected from the cham-
ber as indicated in dotted lines. Suitably su-
cured in each frame is an air bag 4 made of
any suitable water-proof and air-tight mate-
rial and of suitable size to be contained within
the wing tip when the frame 2 is retracted.
Means are provided for inflating these bags
when the slides are projected. In Fig. 2 one
of these air bags is shown in its inflated con-
dition.

While any suitable means will be provided
for extending and retracting the frames 2, I
prefer to so arrange the mechanism that the
frames will be automatically extended on the
release of latches controlled by the pilot.
Each frame 2, it will be noted, has a nut 5
connected therewith through which passes a
screw 6 preferably of a steep pitch. Each
screw is mounted for rotational movement
while held from lengthwise movement. With-
in the body of the plane is journaled the
gear wheel 7, with which mesh the pinions 8
on the screws 6. This gear wheel is connected
with a shaft 9 provided with a crank 10 so
that it may be operated by the pilot to ac-
tuate the screws to retract the frames 2.
Springs 11 are provided tending to extend the
frames. Preferably these springs are coil
springs surrounding the screws 6 and bearing
against the nuts 5 and the inner bearings of
the screws 6. Latches 12 are provided piv-
oted on the wings of the plane and adapted
to engage keepers 22 formed in the frames 2.
These latches are formed as bell crank levers
and are actuated by means of cables 13 con-
ected with opposite ends of a lever 14 ful-
crumped in the body of the plane in a suitable
position to be actuated by the pilot.

To supply air for inflating the air bags I
preferably employ two cylinders 15 contain-
ing compressed air and preferably detachably
secured to the framework of the plane. Con-
ected with each air cylinder is a pipe 16 pro-
vided with a valve 17 governing the admis-
sion of air to the flexible pipes 18 connected
with the air bags. The valve stems are pro-
vided with levers 19 connected by cables 20 to
opposite sides of a drum 21 mounted in the
body of the machine and suitably positioned
for operation by the pilot. The air bags may
thus be simultaneously inflated after the
frames carrying them have been projected
as described.

From the constructions described it will be
evident that in case of a forced descent the
buoyancy of a plane can be almost instantly
increased to an extent sufficient to float the
machine and its crew, and that the extra buo-
yancy is located where it would be most ef-
factive in keeping the body of the plane on an
even keel and with the crew well above the
surface of the water.

What I claim as my invention is:
1. An aeroplane provided with a chamber;
   a slide adapted to be projected from said
   chamber; an inflatable air bag carried by said
   slide and normally contained within the
   chamber; and means for inflating the bag
   after the slide has been projected and the bag
   thus carried outside the said chamber.
2. An aeroplane provided with chambers.
in its wing tips open at their outer ends; slides normally positioned in said chambers but adapted to be projected therefrom; air bags carried by said slides; and means for inflating the bags when the slides are projected.

3. An aeroplane having its wing tips provided with chambers and with normally contracted expansible air bags, normally shielded from external air pressure; means for projecting the bags from the chambers, and means for expanding said bags to serve as floats when thus projected.

Signed at Toronto, Canada, this 27th day of October, 1927.

DOMENICO PALLARIA.