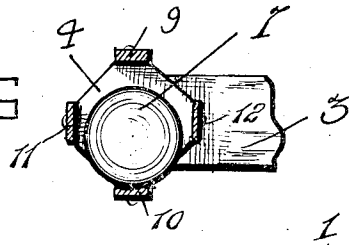
J. D. MacGILLIVRAY.

AEROPLANE INDICATOR.

APPLICATION FILED JUNE 27, 1918.

1,316,313. Patented Sept. 16, 1919.

Fig 6



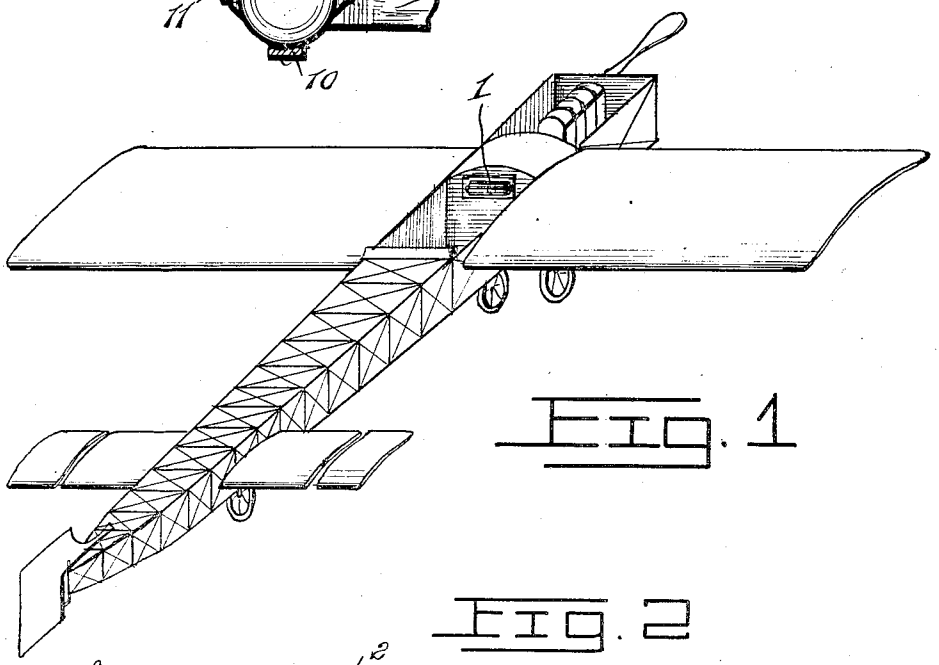


Fig. 1

Fig. 2

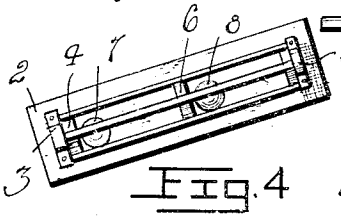
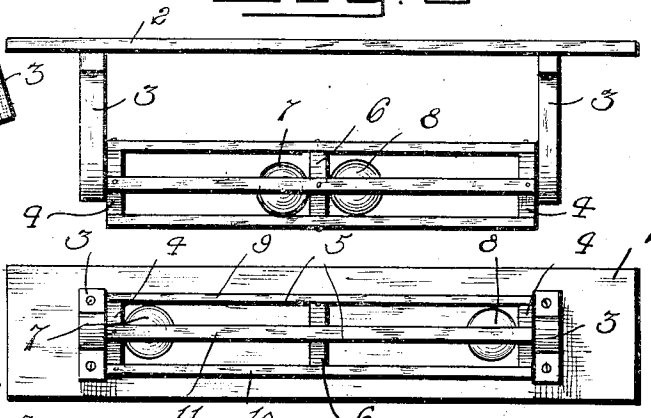


Fig. 4



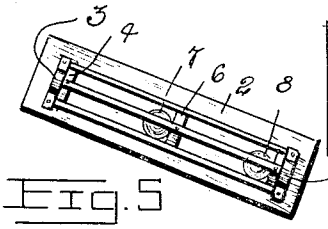


Fig. 5

Fig. 3

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AEROPLANE-INDICATOR.

1,316,313. Specification of Letters Patent. Patented Sept. 16, 1919.

Application filed June 27, 1918. Serial No. 242,223.

To all whom it may concern:

Be it known that I, JOHN D. MacGILLIVRAY, a subject of the King of Great Britain, residing at Antigonishe, Province of Nova Scotia, Canada, have invented certain new and useful Improvements in Aeroplane-Indicators; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to heavier-than-air machines and more particularly to an indicator to be carried by aeroplanes and similar flying machines.

An object of the present invention is to provide an indicator of a comparatively simple construction which may be easily and readily applied to the frame of any flying machines and which when applied will accurately indicate the position of the flying machine.

With the above and other objects in view which will hereinafter appear as the description continues, the invention consists of the novel features of construction, combination and formation of parts as will be hereinafter more fully described and particularly pointed out in the appended claim.

In the accompanying drawings has been shown a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details herein exhibited, but the right is hereby reserved to any changes, alterations or modifications to which recourse may be had that come within the scope of the claim without departing from the spirit of the invention or sacrificing the efficiency of the same.

In the accompanying drawings:

Figure 1 is a perspective view of an ordinary monoplane having the invention applied thereto;

Fig. 2 is a plan view of the indicator embodying the present invention;

Fig. 3 is a side elevation of the same;

Figs. 4 and 5 illustrate different positions of the indicator while the machine is traveling through the air; and,

Fig. 6 is a detail cross section through the indicator.

Referring now more particularly to the accompanying drawings wherein like and corresponding parts are designated by similar reference characters throughout the several views.

In Fig. 1 of the drawings I have illustrated a monoplane having the indicator 1 applied to the frame thereof, but it is, of course, to be understood that such indicators can be used on aeroplanes or similar flying machines. This indicator is mounted upon the frame work of the machine in sight of the operator so that the latter may readily glance at the indicator and be advised as to whether he is flying upside down, or whether his machine is tilted to either side.

The indicator embodying the present invention comprises a support 2 which may be secured to the frame work of the machine and projecting from the support 2 are the arms or brackets 3. Secured to the outer ends of these arms are the plates 4 and these plates are connected by the horizontal strips or bars 5 being preferably four in number as better shown in Fig. 6. Arranged within the medial portion of these strips is a partition 6 which forms two compartments and arranged within these compartments are the balls or indicators 7 and 8 respectively. The strip 9 may represent the top of the indicator, the strip 10 may represent the bottom of the indicator and the strips 11 and 12 respectively represent the sides of the indicator.

When this indicator is applied to an ordinary flying machine and the latter is climbing through the air the balls will fall back upon the strip 11, which readily indicate that the machine is traveling in an upper direction. When descending the balls will rest upon the inner face of the strip 12, thereby indicating that the machine is descending. When the machine is traveling in a horizontal direction the balls will lie adjacent to the partition 6 as shown in Fig. 2 of the drawings, or lie in a level position adjacent to the opposite ends of the indicator as better illustrated in Fig. 3 and when the aeroplane is traveling in a horizontal direction with its right side up these balls will rest upon the strip 10. Should the flying machine turn over and fly upside down, the balls then will travel along the inner face of the strip 9. When the aeroplane is tilted toward the left side, these balls will assume the position as shown in Fig. 4 and when the machine is tilted toward its right

side these balls will assume the position as shown in Fig. 5. The strips 9, 10, 11 and 12 may have special indications thereon so that the pilot of the flying machine may readily ascertain the position in which the machine is flying and in this manner should the machine be flying in the air above the clouds where the pilot could not tell the position in which the machine is flying, he could readily glance at the indicator and be advised the exact position in which the machine is flying and as to whether or not the machine is climbing or descending within the air.

Having thus fully described my invention, what I claim is new and desire to secure by Letters Patent is:—

An indicator for flying machines comprising a support, brackets extending outwardly from said support, plates secured to said brackets, a plurality of strips secured to said plates, a partition plate secured to said strips and forming two compartments, a ball arranged within each of said compartments and said balls adapted to travel within said compartments and being arranged for engagement with said plates and strips to indicate the respective positions of the flying machine.

In witness whereof I have hereunto set my hand.

JOHN D. MacGILLIVRAY.

Witnesses:
G. M. WALL,
THOMAS GERRIOR.