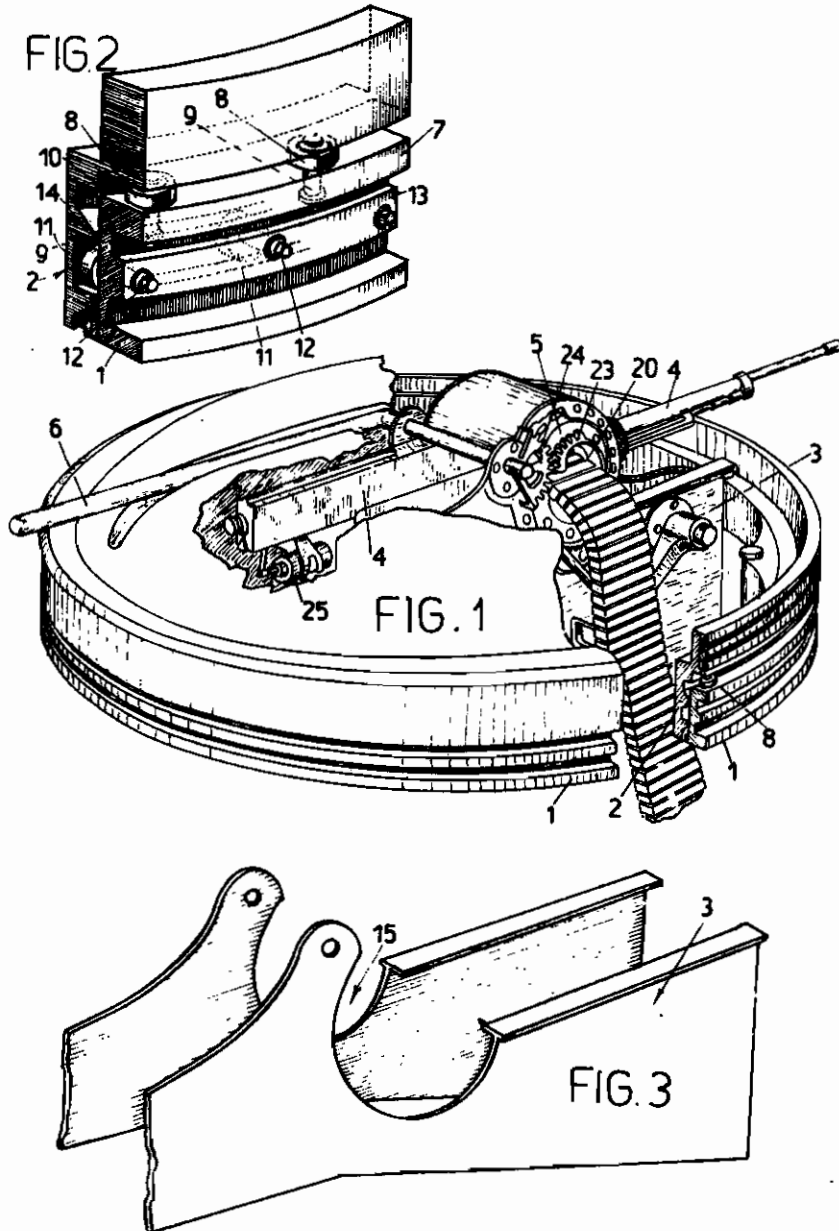


PUBLISHED
JUNE 8, 1943.
BY A. P. C.

E. LANCIANI
ARMED ROTATING TURRETS FOR AIRCRAFT
Filed Dec. 16, 1939

Serial No.
309,569
3 Sheets-Sheet 1



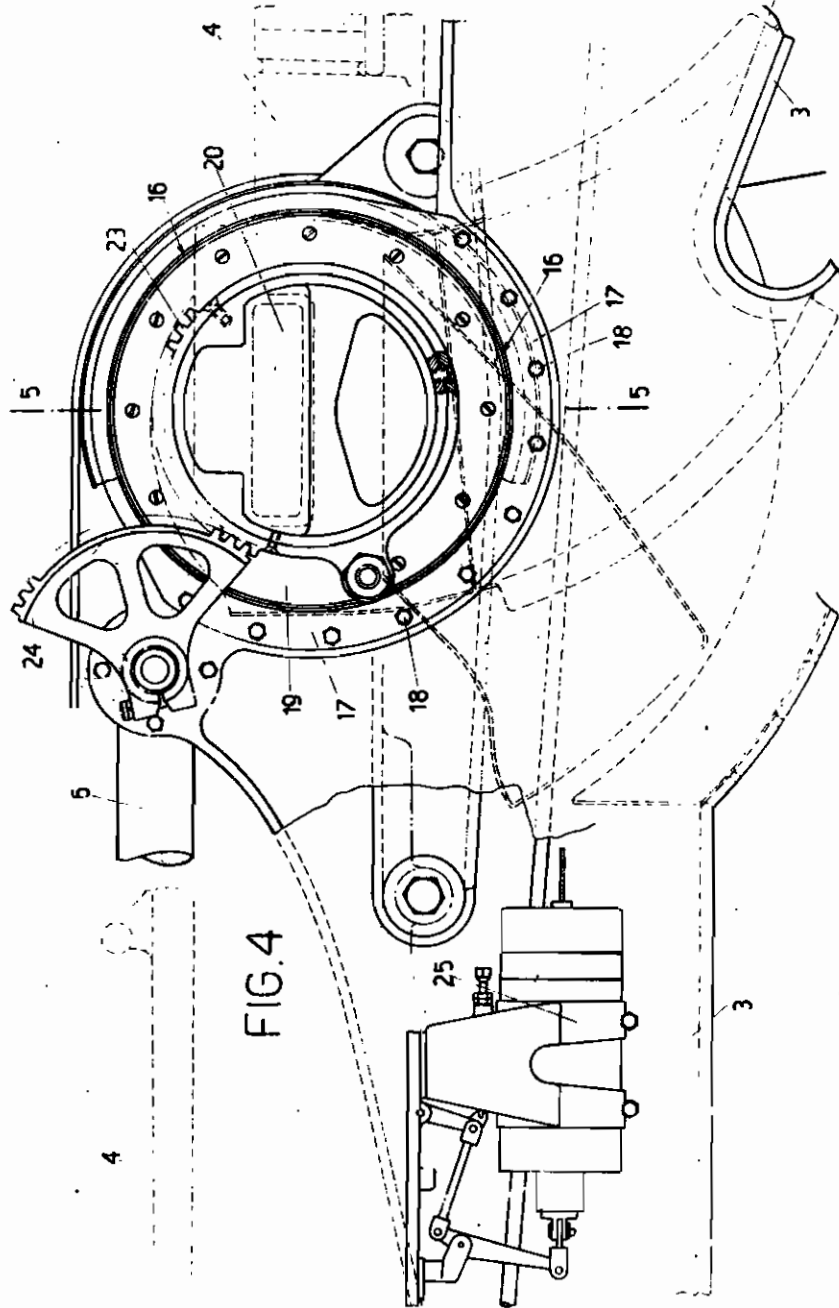
INVENTOR:
Ettore Lanciani
BY
Morrison, Kennedy & Campbell
ATTORNEYS,

PUBLISHED
JUNE 8, 1943.
BY A. P. C.

E. LANCIANI
ARMED ROTATING TURRETS FOR AIRCRAFT
Filed Dec. 16, 1939

Serial No.
309,569

3 Sheets-Sheet 2



INVENTOR:
Ettore Lanciani
BY
Morrison, Kennedy & Campbell
ATTORNEYS.

PUBLISHED

JUNE 8, 1943.

BY A. P. C.

E. LANCIANI

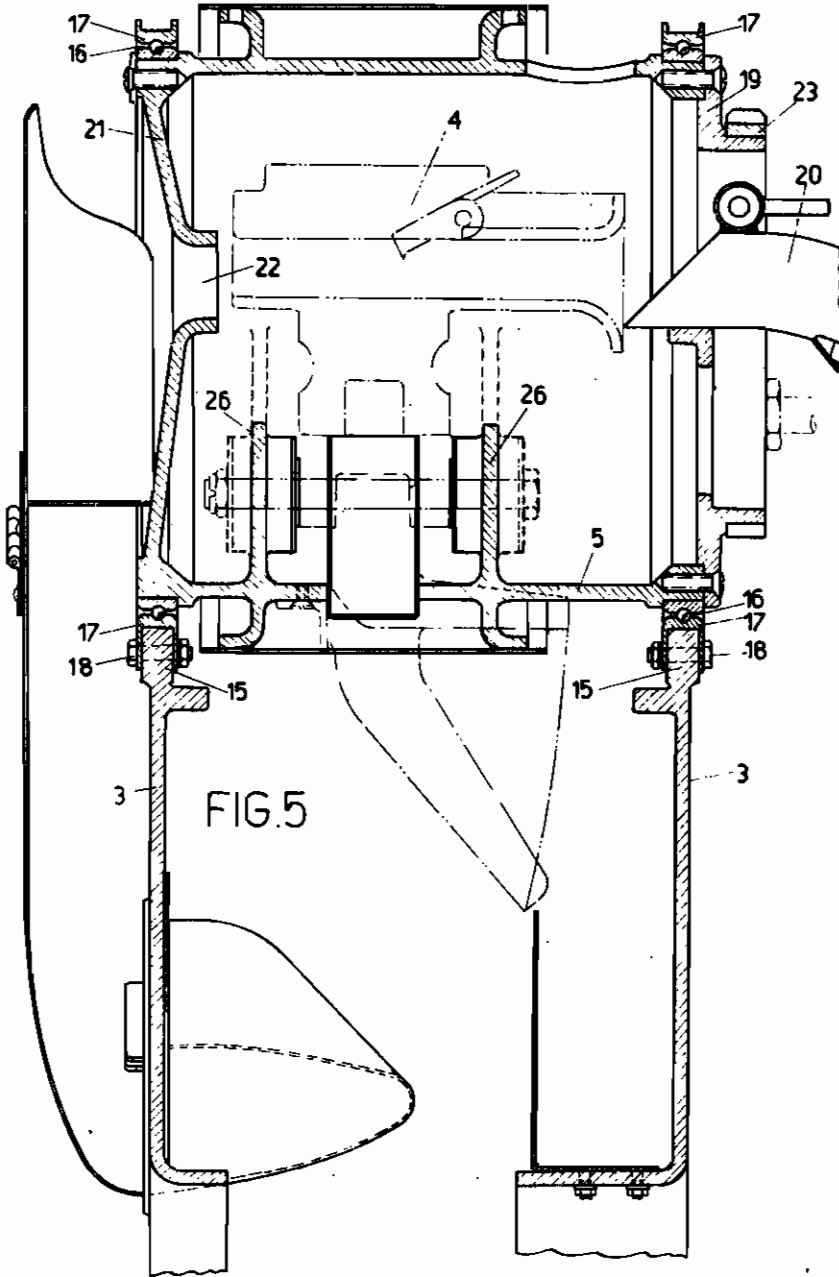
ARMED ROTATING TURRETS FOR AIRCRAFT

Filed Dec. 16, 1939

Serial No.

309,569

3 Sheets-Sheet 3



INVENTOR:
Ettore Lanciani
BY
Morrison, Kennedy & Campbell
ATTORNEYS.

ALIEN PROPERTY CUSTODIAN

ARMED ROTATING TURRETS FOR AIRCRAFT

Ettore Lanciani, Milan, Italy; vested in the
Alien Property Custodian

Application filed December 16, 1939

The present invention refers to important improvements in the armed rotating turrets for aircraft.

An important problem referring to the achievement of armed rotating turrets for aircraft is the problem of the weapon's suspension. Another fundamental problem concerns the means for rotating the turret, both problems completing each other.

According to the invention the system of the weapons mounting comprises: a bolster substantially arranged on a diameter of the annular rotating structure, the weapon itself being mounted on a drum, which, besides allowing the training of the weapon in the vertical sector, secures a very good ammunition feed, because the weapon swings around an axis passing through the geometric center of the feeding aperture.

Another feature of the invention consists in this, that the outside fixed counter-ring associated with the inner moving ring is provided with rolling means corresponding to properly shaped surfaces in the inner ring, so as to reduce as much as possible the overall thickness of the two rings width.

According to the invention the rotation of the turret and of the weapon or weapons mounted in it, is operated by means of a hand-wheel carried on a swinging support, said hand-wheel being connected by means of a geared transmission to a rack or anything similar.

Preferably a single controlling means is provided for operating both the brandishing of the weapon and the rotation of the turret. The above stated feature and other more, will be more particularly specified in relation to the attached drawing, given, by all means, only as an example declared limiting in no way the range of the invention.

Fig. 1 shows the turret in a perspective view, partially stripped of its shroud to show the main parts concerning the invention;

Fig. 2 is a perspective projection of a part of the annular structure;

Fig. 3 is a partial perspective view of the diametral bolster carrying the drum;

Fig. 4 shows the weapons mounting on a larger scale and in side-elevation;

Fig. 5 is a cross-section, on a larger scale, along line 5—5 of Fig. 4.

Referring to Fig. 1, the outer fixed ring is shown in 1, and in 2 the inner rotating ring coupled to the latter. 3 is the diametral bolster carrying weapon 4 through a drum 5, in a manner which will be disclosed further on. 6 is a member for balancing the aerodynamic thrust as per another patent of the same authors.

Fig. 2 shows the details of the annular structure: the fixed outer-ring 1 carries on its upper edge 7, at usual distances, a number of rollers 8, pivoted in 9, against which runs the zone 10, of the movable ring 2. Another series of rollers 11, is pivoted in 12 to the central part 13 of the fixed ring, said rollers being mounted at right angles to the first rollers so that the moving ring 2 may come to bear rotatably on said rollers 11, by means of the projection 14. This secures a very good mounting, allowing the free motion of the inside ring. This latter ring carries the weapon's mounting 3, which provides the seat 15 for drum 5, solid with the weapon. Said drum (compare Figs. 4 and 5) is mounted on seat 15 by means of ball-races 16, whose outer rings 17 are fixed by means of screws 18 to the weapon's mounting or bolster 3. One end of said drum has an annular cover 19, to which is secured the feeding device 20 for the weapon, the feeding being achieved along the axis of the drum.

The other end has a cover 21, provided with an aperture 22 for the discharge. On cover 19 is bolted a gear-ring 23, meshing with toothed sector 24, operating the balancing member 5 in synchronism with the movements of weapon 4. 25 is an electric-detent according to another patent of same date of the authors.

Drum 5 carries webs 26 for swinging the brandishing system.

The details in construction and of application may vary materially without exceeding the limits of the invention.

ETTORE LANCIANI.