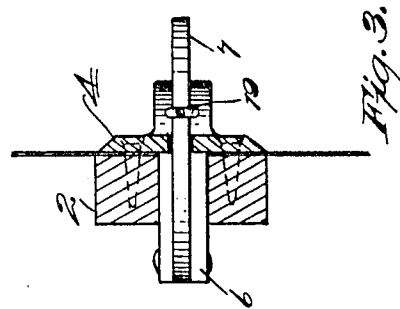
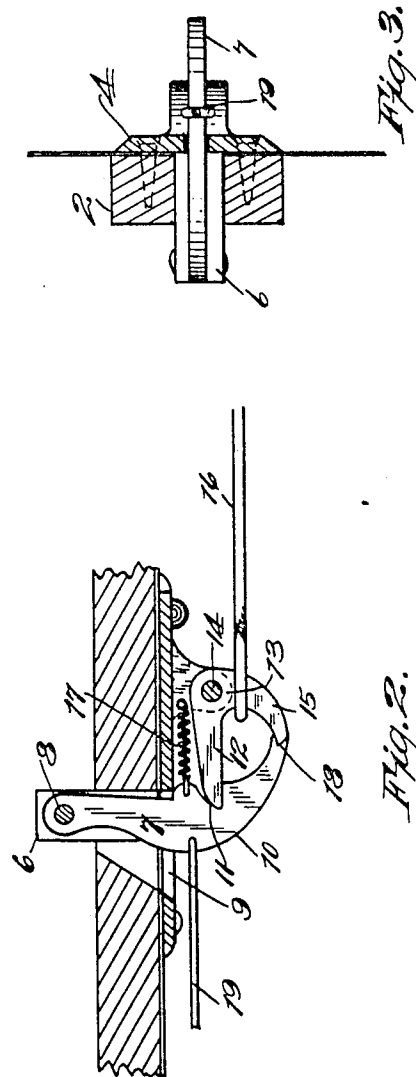
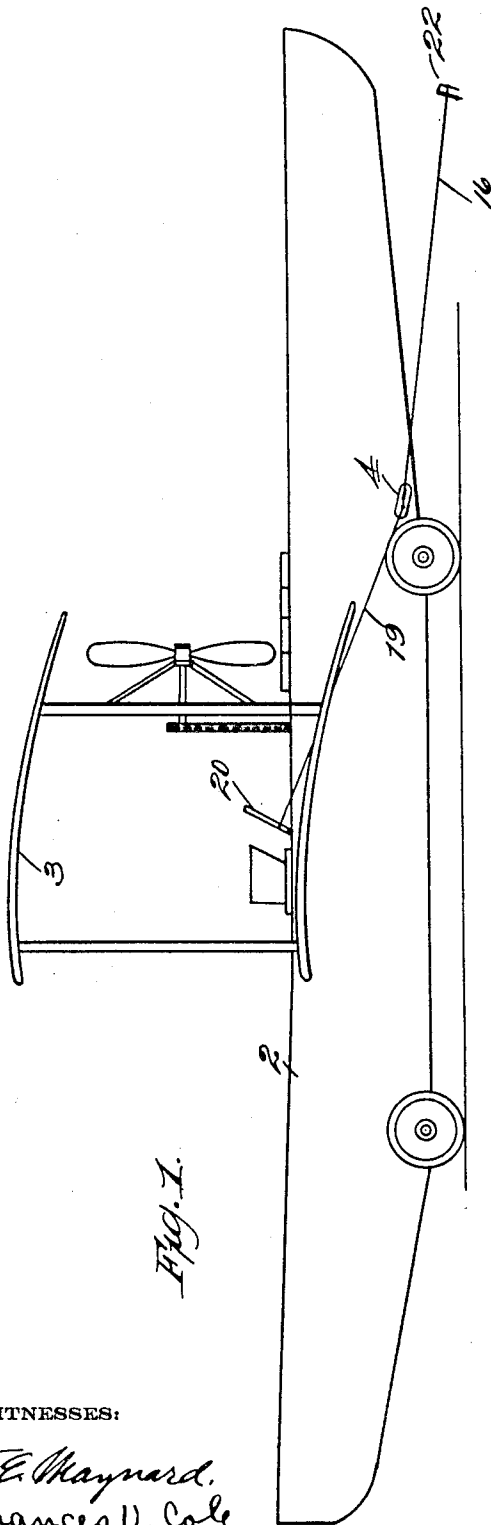


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J. R. FROBERG.
AEROPLANE ATTACHMENT.
APPLICATION FILED JUNE 20, 1912.

1,044,161.

Patented Nov. 12, 1912.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHAN RICHARD FROBERG, OF RICHMOND, CALIFORNIA

AEROPLANE ATTACHMENT.

1,044,161.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed June 20, 1912. Serial No. 704,752.

To all whom it may concern:

Be it known that I, JOHAN R. FROBERG, a citizen of the United States, residing at Richmond, in the county of Contra Costa and State of California, have invented new and useful Improvements in Aeroplane Attachments, of which the following is a specification.

This invention relates to a releasing device for aeroplanes and the like.

The object of the present invention is to provide a simple, dependable and easily operated connection whereby an aeroplane may be restrained until its propelling mechanism is exerting the necessary propelling effect to lift the aeroplane immediately upon the release of the latter.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of an aeroplane, showing the attachment applied. Fig. 2 is a plan view in partial section of the device. Fig. 3 is an edge view in partial section of the release.

I have shown in the present embodiment of my invention an aeroplane consisting of a fuselage or body 2, provided with supporting aeroplanes 3. Upon each side of the aeroplane body is attached a bracket or plate 4.

Upon the plate or bracket 4, which may be fastened to the apparatus by screws 5 or other suitable devices, there is formed a transversely projecting shank 6 which is slotted to receive a latch 7. The latch 7 is pivoted at 8 to the shank 6, and the free end of the latch extends through a slot 9 formed in the plate 4. The latch 7 is formed with an outer convex curved surface 10 at its outer end adapted to ward off weeds, bushes and other obstacles which may be encountered during the flight or movement of the vessel. This latch 7 is provided on its opposite edge with a recess or notch 11 into which is adapted to snap and rest a prong 12 of a cast-off or trip latch 13 which is pivoted at 14 in suitable bearings on the plate 4.

The cast-off 13 in addition to its longer arm or prong 12 which enters the latch notch 11 also has the cast-off arm 15 which has a concaved edge adjacent to the prong 12; the root of the curve of the cast-off arm

13 being contiguous to the hub of the cast-off, so that when a rope or other tie 16 is passed over the end of the cast-off arm 15 and this latter is turned until the lock prong 12 enters the latch seat 11, the bight of the cable 16 will slip well toward the fulcrum 14, thus reducing the force applied to the cast-off when the connection 16 becomes taut.

The latch 7 is normally drawn toward the fulcrum 14 of the cast-off 16 by a contractile spring 17, one end of which is fastened to the latch and the other end of which is fastened to the plate 4. The outer end of the latch 7 is provided with a concaved seat or recess 18 adapted to embrace the tip of the cast-off arm 15; the latter being provided with a convexly curved edge also for the purpose of warding off such obstacles as would tend to become entangled with the cast-off device.

In operation, the aviator or his assistant passes the ends of the restraining cables 16 over the cast-off arms 13 and the latch 7 snaps against the cast-off arms so that the end of the arm 12 and the end of the arm 15 each engage their respective seat, the former for the purpose of restraining the cast-off arm when placed under tension by the cable 16, and the latter for the purpose of forming a smooth exterior surface to avoid entangling with obstacles. When the propeller of the aerial apparatus is sufficiently speeded to attain the necessary force to propel the ship, the operator may release the levers 7 by a pull on connecting wires or cords 19, of which there is one connected to each latch 7; the cords running upwardly to and being connected with operating levers 20 mounted adjacent to the aviator's chair 21.

The restraining cables 16 are attached to anchoring posts or other stationary elements 22. These will effectually prevent the movement of the aerial vessel until the operator throws the levers or lever 20 to unlatch the cast-off arm 13 from the restraining latch 7, whereupon the long arm 12 of the cast-off being released will swing and the bight of the cable 16 will slip off of the cast-off arm 13, thus releasing the aeroplane which may immediately begin its flight.

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

1. In combination with an aerial apparatus, a plate attachable to the side thereof having a slot, a latch pivoted upon one side

of the plate and projecting outwardly through and to the opposite side of the plate, said latch having a recess and a cast-off device pivoted upon the plate adapted to be restrained by engagement with the recessed portion of the latch, said latch having a convexly curved forward surface, and means for pulling the latch to disengage the cast-off.

10 2. A cast-off for aerial machines, comprising a plate having a slot and a projection extending transversely from one side of the plate, a latch pivoted in said projection and extending through said slot to the opposite
15 side of the plate, a spring connected to the latch and plate, a cast-off having a plurality of arms each engageable with a seat formed for its reception in the latch, one of said cast-off arms being concaved, a tension rope
20 anchored at one end and adapted to be passed over the curved arm of the cast-off, and means for operating the latch to release the cast-off.

3. A cast-off for aerial machines, comprising a plate having a slot and a projection extending transversely from one side of the plate, a latch pivoted in said projection and extending through said slot to the opposite side of the plate, a spring connected to
25 the latch and plate, a cast-off having a plurality of arms each engageable with a seat formed for its reception in the latch, one of said cast-off arms being concaved, a tension

rope anchored at one end and adapted to be passed over the curved arm of the cast-off, and means for operating the latch to release the cast-off, the exterior forward edge of the latch being formed with a convex curve to ward off obstacles.

4. A cast-off for aerial machines, comprising a plate having a slot and a projection extending transversely from one side of the plate, a latch pivoted in said projection and extending through said slot to the opposite side of the plate, a spring connected to the latch and plate, a cast-off having a plurality of arms each engageable with a seat formed for its reception in the latch, one of said cast-off arms being concaved, a tension rope anchored at one end and adapted to be passed over the curved arm of the cast-off, and means for operating the latch to release the cast-off, the exterior forward edge of the latch being formed with a convex curve to ward off obstacles, and the curved arm of the cast-off being adapted to enter and seat in the end of the latch, the tips of the latch and the cast-off arm being provided with a flush exterior surface.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHAN RICHARD FROBERG.

Witnesses:

JOHN H. HERRING,

GENEVIEVE S. DONELIN.