

1,065,389.

Patented June 24, 1913.

Fig. 1.

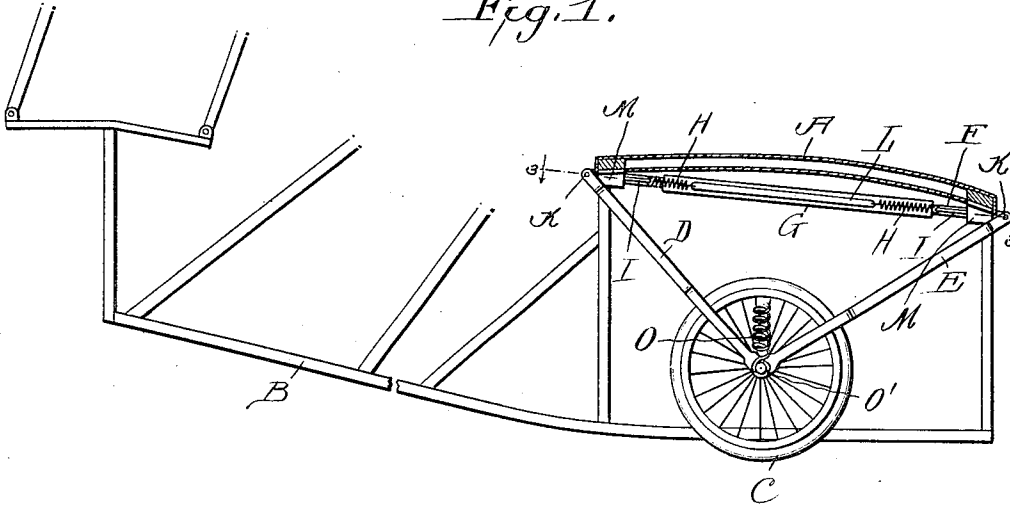


Fig. 2.

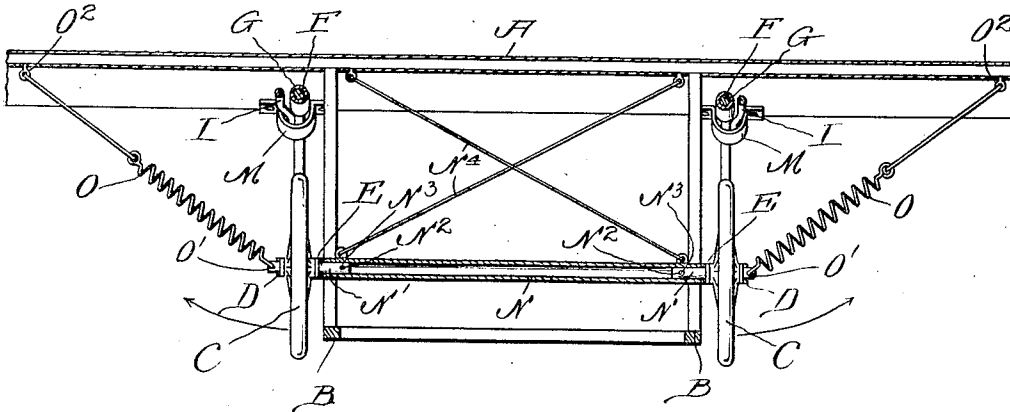


Fig. 3.

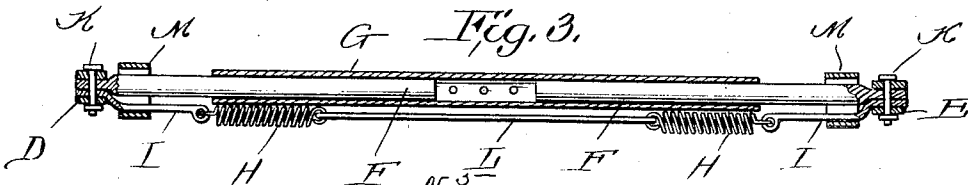
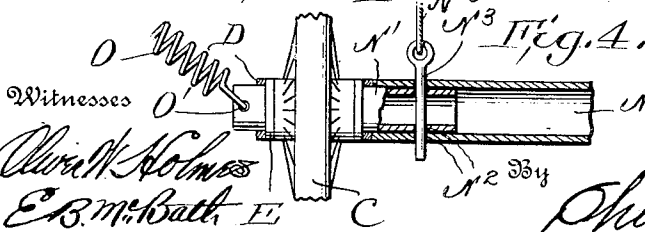


Fig. 4.



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UNITED STATES PATENT OFFICE

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AEROPLANE.

1,065,389.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed October 8, 1910. Serial No. 585,996.

To all whom it may concern:

Be it known that I, HARRY A. ORME, a citizen of the United States, residing at Beechwood, Wesley Heights, in the District of Columbia, have invented a new and useful Improvement in Aeroplanes, of which the following is a specification.

This invention relates generally to aeroplanes, and more particularly to certain improvements upon the aeroplane patented to me June 29, 1909, #926,593.

My present invention relates to a novel construction of wheel frame and also of means for holding said frame and wheel in place while starting; together with means for drawing said wheels and frames up when landing.

The object of my present invention is to provide a spring frame for the supporting wheel, said frame yielding sufficiently to take any shock or jar during the starting operation, thereby providing a rolling support upon which the aeroplane can get its initial start without transmitting any of the jar to the aeroplane proper.

Another object is to provide a novel construction of device by means of which the wheel frames can be lifted away from the skids or runners so that the landing can be made entirely upon the skids or runners, as experience has demonstrated the fact that better landing can be made upon the skids or runners and all injury to the starting wheel is thereby avoided.

With these various objects in view, my invention consists in the novel construction of the several parts, and in their peculiar arrangement or combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawing forming a part of this specification: Figure 1 is a view showing a portion of an aeroplane and illustrating the manner of arranging the wheel frame, and wheel. Fig. 2 is a front view partly in section showing the means for normally holding the wheels vertical during the starting operation, and also the means for moving said wheels up when landing. Fig. 3 is a view partly in section showing the details of the spring wheel frame. Fig. 4 is an enlarged detail view showing the manner of securing the wheel frames in their vertical positions.

Referring to the drawings, A indicates the lower plane of a bi-plane and B, B the skids

or runners, both of which are of the usual or of any approved construction. There are two supporting wheels C, C each mounted in two forks D and E, the fork D being slightly shorter than the fork E. These forks D, and E are pivotally connected at their upper ends to the rods F, F which rods slide in a tubular rod G, and these rods F, F are held in place by means of springs H, H connected to the rods F, F by means of plates I, I; the forks, rods and plates all being united by a bolt K. The coiled springs H, H are united by means of a wire rod L. These spring frames are pivotally attached to the underside of the lower plane, upon the outer sides of the runners, by means of clips M, M.

It will be noted that the wheels C, C extend a short distance below the runners and consequently the aeroplane will be supported upon these wheels, and as the machine travels along in its initial start the spring frame permits a certain amount of yielding to take place thereby relieving the aeroplane proper of jar or jolt.

The yielding operation takes place by virtue of the rods F, F sliding in and out of the tube G, the springs H, H serving to draw them back each time they are forced out by downward pressure.

The wheel frames are held in parallel relation by means of a tubular rod N into the ends of which fit the inwardly projecting tubular stubs N' projecting inwardly from the center of each wheel hub. The tubular rod N and the inwardly projecting stubs N' are provided with registering apertures N² into which pins N³ fit thereby securely connecting the wheels to the tubular bar, said tubular bar being securely braced by means of guy wires N⁴. Pull wires N⁵ are connected to the pins N³, said pull wires being connected to any suitable form of lever, which when pulled will withdraw the pins thereby permitting the stubs N' to be withdrawn from the ends of the tubular rod N, and thus releasing the wheel frames and permitting the coil springs O, O to immediately act upon said frames for the purpose of drawing them up, thereby permitting the machine to land upon the skids or runners.

If the machine should weigh considerable, it might be necessary to arrange the wheels in pairs, one wheel upon the exterior of each runner and one wheel upon the interior of each runner and in that event, the inner wheels would be connected permanently to

the tubular rod N and said tubular rod N would be made in two sections hinged together so as to brake upwardly carrying with them the wheels connected to the ends thereof.

The coiled springs O are fastened at their upper ends to the bottom of the lower plane as shown at O² and at their lower ends are connected to the outer ends of the wheel axles or stub shafts as most clearly shown at O'.

It will thus be seen that I provide a novel construction of spring supporting wheel and also a new method of elevating said wheels when landing.

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

1. In an aeroplane, the combination with a pair of supporting wheels, of frames in which said wheels are mounted, said frames being pivoted to the plane of an aeroplane, and adapted to swing outwardly in opposite directions.

2. In an aeroplane, the combination with a supporting wheel, of a yielding frame in which said supporting wheel is mounted, said frame being connected to the plane of the aeroplane, means for normally holding

the wheel frame in a perpendicular position together with means for elevating said wheel frame outwardly and laterally, for the purpose specified.

3. In an aeroplane, the combination with supporting wheels, frames carrying said wheels, said frames being pivotally connected to a plane of the aeroplane, means for normally holding said wheeled frames in parallel relation, means for releasing said frames, and means for swinging said frames upwardly and outwardly.

4. The combination with a wheel, of the forks in which said wheel is mounted, rods to which the upper ends of the forks are connected, a tubular member into which the rods slide and a spring connection between said sliding rods, as set forth.

5. The combination with a supporting wheel, of a triangular shaped frame in which said wheel is mounted, the upper member of said frame being capable of expansion and contraction longitudinally, as set forth.

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Witnesses:

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