

R. ARNOUX.

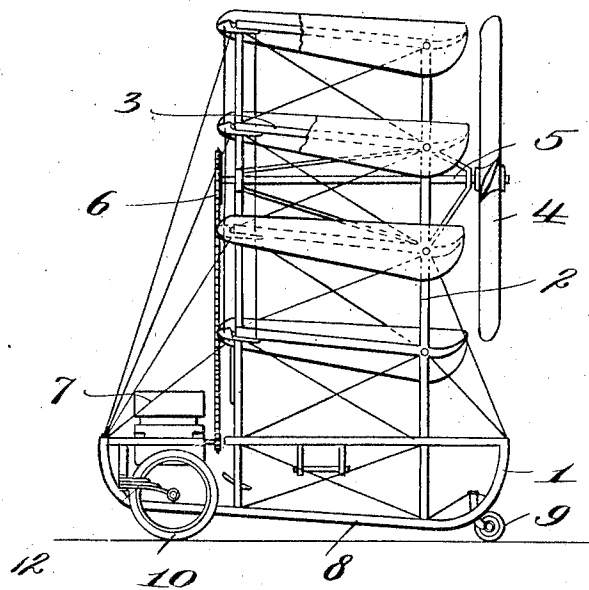
AEROPLANE.

APPLICATION FILED JUNE 24, 1911.

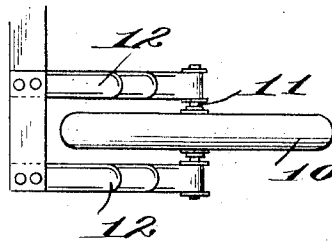
1,025,941.

Patented May 7, 1912.

*Fig. 1.*



*Fig. 2.*



Witnesses:

*Ed. Stiller*  
*W. B. Kuder*

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# UNITED STATES PATENT OFFICE.

RENÉ ARNOUX, OF PARIS, FRANCE.

## AEROPLANE.

1,025,941.

Specification of Letters Patent.

Patented May 7, 1912.

Original application filed November 20, 1909, Serial No. 529,153. Divided and this application filed June 24, 1911. Serial No. 635,146.

*To all whom it may concern:*

Be it known that I, RENÉ ARNOUX, a citizen of the Republic of France, residing at Paris, France, have invented certain new and useful Improvements in Aeroplanes, of which the following is a specification.

The present invention relates to improvements in aeroplanes, and it has for its object primarily to provide an improved mounting for structures of this character which embodies a frame, preferably the main frame of the apparatus, such frame having relatively long skids or shoes, and wheels which are sustained by springs whereby during the landing of the aeroplane or while the same is traveling over the ground, the weight of the apparatus will cause such springs to yield and thereby permit the relatively long skids or shoes of the frame to engage or contact with the ground and thereby produce a braking or retarding effect which will bring the apparatus to a state of rest. Furthermore, while the aeroplane is traveling over the ground, these relatively long skids or shoes will bridge or span ruts, holes or transverse ditches in which the wheels may enter, the movement of the machine being unimpeded owing to the support afforded by these skids or shoes, and the wheels will be able to leave the ruts, holes or ditches without liability of injury or breakage.

To these and other ends, the invention consists in certain improvements and combinations and arrangements of parts, all as will be hereinafter more fully described, the novel features being pointed out particularly in the claims at the end of the specification.

In the accompanying drawing:—Figure 1 represents a side elevation of an aeroplane equipped with a mounting or landing mechanism constructed in accordance with the present invention; and Fig. 2 is a top plan view of one of the landing wheels showing its spring mounting and a portion of the frame to which these springs are connected.

Similar parts are designated by the same reference characters in the several views.

Landing mechanism constructed in accordance with the present invention is capable of use in connection with aeroplanes or aerial craft of various types. I have shown in the present instance the landing mechanism as applied to one form of aeroplane as

an example, it having a main or base frame 1, an upper frame 2 which serves as a mounting for the planes 3 and for a propeller 4, the propeller being mounted on a driving shaft 5 and the driving shaft is operatively connected by sprocket and chain gearing 6 or equivalent mechanism to a motor 7, the latter being preferably placed at a relatively low point on the structure and in the present instance it is mounted on the main or base frame 1.

The particular type of aeroplane shown generally in the present instance is described fully in my prior application, Serial No. 529,153 of which the present application is a division.

The main or base frame is formed with longitudinally extending skids or shoes 8, these skids or shoes preferably extending substantially throughout the length of the base or main frame and the rear portion of the main frame is supported by a trailing wheel 9 while the forward portion of the main or base frame is provided with landing wheels 10. Each of these wheels has a yielding connection with the main or base frame whereby when the weight of the machine is imposed upon these landing wheels, the spring connections will yield and allow the skids or shoes on the bottom of the main or base frame to engage and slide over the surface of the ground, the friction thus produced serving to retard the motion of the apparatus. In the present instance the axis 11 of each landing wheel is secured to a pair of springs 12 which are preferably arranged at opposite sides of the landing wheel. In the preferred construction, the forward ends of the springs are pivotally connected to the frame of the apparatus whereby the wheels 10 may assume different positions about these pivots which are in advance of the respective wheels and thereby enable the wheels to steer themselves automatically. These springs are secured to a cross member or other appropriate part of the main or base frame.

To insure substantially uniform contact of practically the entire length of the skids or shoes with the ground during landing, these skids or shoes normally slope upwardly toward the front of the main or base frame so that when the spring-mounted landing wheels receive the thrust due to the weight of the apparatus in landing, these

skids or shoes will descend and assume a position substantially parallel to the ground. Owing to the relatively long surfaces offered by the skids or shoes to the ground, stability is afforded the apparatus that will prevent its pitching forward or overturning, and, moreover, the maximum braking or retarding effect will be obtained. These skids or shoes according to the present invention are rigidly attached to or form rigid parts of the main or base frame of the machine and, hence, they may be made very strong and will be amply able to withstand the shocks incident to the landing of the apparatus without liability of breakage.

I claim as my invention:—

1. In an aeroplane, a frame provided with a relatively fixed shoe, landing wheels, and means for yieldably mounting said wheels with respect to said frame to permit said shoe to contact with and produce a braking action upon the ground during landing of the aeroplane and causing said wheels to normally project below said shoe and to support the aeroplane.

2. In an aeroplane, a frame provided with a long and straight skid or shoe, a landing wheel arranged toward the front of said skid or shoe, and a spring connection be-

tween said frame and landing wheel to permit said skid or shoe to descend relatively to the landing wheel and engage substantially uniformly throughout its length with the ground.

3. In an aeroplane, the combination of a main supporting frame having a substantially straight longitudinally extending skid or shoe rigidly connected in fixed relation thereto, a landing wheel arranged toward the front of the skid or shoe, and a spring connection between said landing wheel and frame and adapted to support the forward end of the skid or shoe in an upwardly and forwardly inclined position with respect to the ground, said spring connection being yieldable to permit the skid or shoe to descend relatively to the landing wheel and engage the ground to produce a braking action thereon during landing of the aeroplane.

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

RENÉ ARNOUX.

Witnesses:

H. C. COXE,  
PAUL BLUM.