O. S. LIND.

FLYING MACHINE.

APPLICATION FILED SEPT. 10, 1918.

1,338,025. Patented Apr. 27, 1920.

Fig. 1.

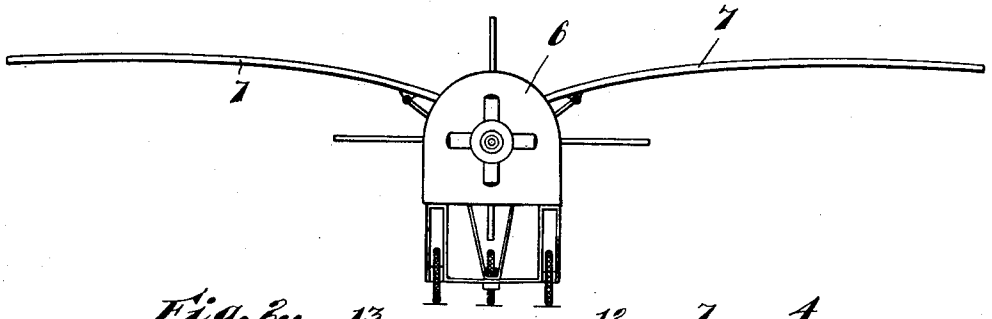


Fig. 2.

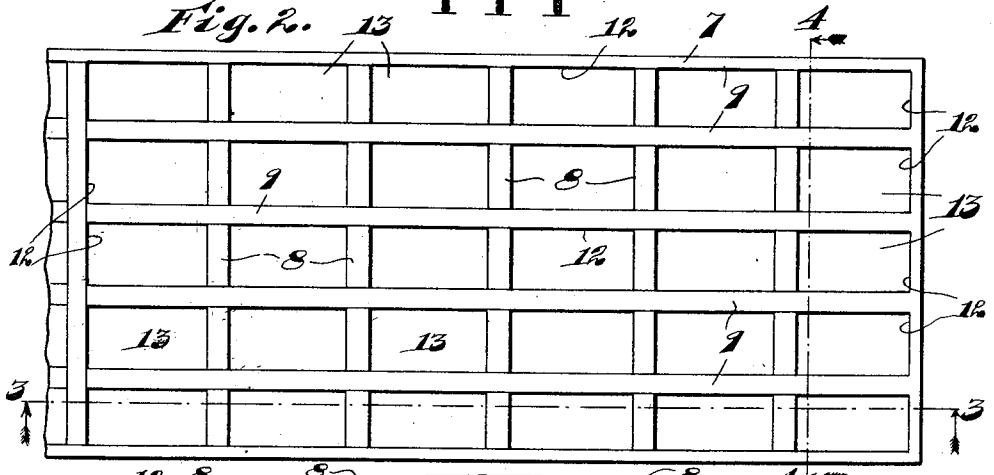




Fig. 3.

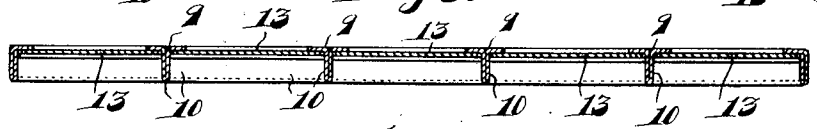


Fig. 4.

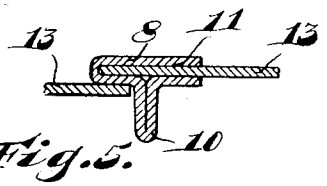


Fig. 5.

Witnesses:
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UNITED STATES PATENT OFFICE.

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FLYING-MACHINE.

1,338,025. Specification of Letters Patent. Patented Apr. 27, 1920.

Application filed September 10, 1918. Serial No. 253,402.

To all whom it may concern:

Be it known that I, OTTO S. LIND, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Flying-Machines, of which the following is a specification.

My invention relates to improvements in flying machines, and more particularly to improvements in the construction of the planes of such machines. The object of the invention is the production of an aeroplane which will be highly efficient in use and which will be stable and safe in operation.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1, is a front elevation of a flying machine embodying the invention,

Fig. 2, a top plan view of a portion of one of the planes of the machine,

Fig. 3, a section taken on line 3—3 of Fig. 2,

Fig. 4, an enlarged section taken on line 4—4 of Fig. 2, and

Fig. 5, an enlarged detail section of a portion of the construction shown in Fig. 3.

The preferred form of construction, as illustrated in the drawings, comprises a wheeled body 6 with which two planes or wings 7 are connected in a manner to permit of vertical oscillation thereof in much the same manner as the movement of the wings of a bird. Suitable propelling means is provided in the body 6 for effecting the desired oscillatory movement of the planes.

Each plane 7 is formed of a frame of lattice-work design, the frame comprising cross-bars 8 and longitudinal bars 9 rigidly connected together as seen in the several views. Each of the bars 8 and 9 is formed with a depending medial flange 10, which, of course, lends strength and rigidity thereto. Each of the bars 8 is also formed at one side with a channel 11, the channels 11 opening horizontally, that is, in the plane of the wing, at one side of the corresponding rectangular opening 12, of which a plurality is formed between the bars 8 and 9, as clearly seen in Fig. 2.

Coöperating with each of the openings 12 is a closure 13, one end of which is securely held in the channel 11 of the corresponding bar 8. The closure 13 is formed of suitable flexible material, secured at its forward edge, and is adapted to normally assume closed position, in which the edges thereof engage against the under sides of bars 8 and 9. The arrangement is such, however, that the closures 13 are adapted to flex downwardly, so that in the event of downward pressure thereon, the same will yield to the dotted line position seen in Fig. 3 in order to allow for the passage of air through openings 12. At all other times, however, the closures 13 remain in closed position to prevent any passage of air upwardly through the plane. When the closures 13 are in closed position, the same are surrounded by the flanges 10, which form a sort of seat or inclosure therefor, protecting the same and coöperating therewith in maintaining a tight connection.

With the construction set forth it will be seen that in the operation of the flying machine, when the wings or planes are rocked upwardly, the closures 13 will open to permit the passage of the air and exert a forward impulse on the machine due to the inclination of the closures 13. Upon movement of the planes in the opposite direction, the closures will automatically rock upwardly to closed position, in which event the planes will be resisted by the air, thus effecting upward propulsion of the machine in much the same manner as a bird flies.

Also, with this arrangement many flying machine accidents will be avoided, inasmuch as such accidents most frequently occur because of downward air currents which unbalance the machine. With the arrangement set forth, however, any downward air currents impinging on the planes of the machine will have no effect thereon, inasmuch as the closure members will automatically flex downwardly to permit of the free passage of the air through the planes.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capa-

ble of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. A plane for flying machines comprising a foraminated frame formed of intersecting bars; an outwardly projecting reinforcing flange on each bar; and normally closed closures for the openings in said frame secured to said bars and yieldable in only one direction from the plane to allow for the passage of air, substantially as described.

2. A plane for flying machines, comprising a foraminated frame formed of intersecting bars; an outwardly projecting reinforcing flange on each bar; and closures for the openings in said frame secured to said bars and yieldable in only one direction from the plane to allow for the passage of air, substantially as described.

3. A plane for flying machines comprising a foraminated frame formed of intersecting bars, each opening in said frame having a bar at one side with an inwardly opening channel, substantially as described.

4. A plane for flying machines comprising a foraminated frame formed of intersecting bars, each opening in said frame having a bar with an inwardly opening channel at one side; and a normally closed closure for each opening secured at one end in the channel thereof and yieldable only in one direction from the plane to allow for the passage of air, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTTO S. LIND.

Witnesses:
JOSHUA R. H. POTTS,
EDWARD A. SCHIELE.