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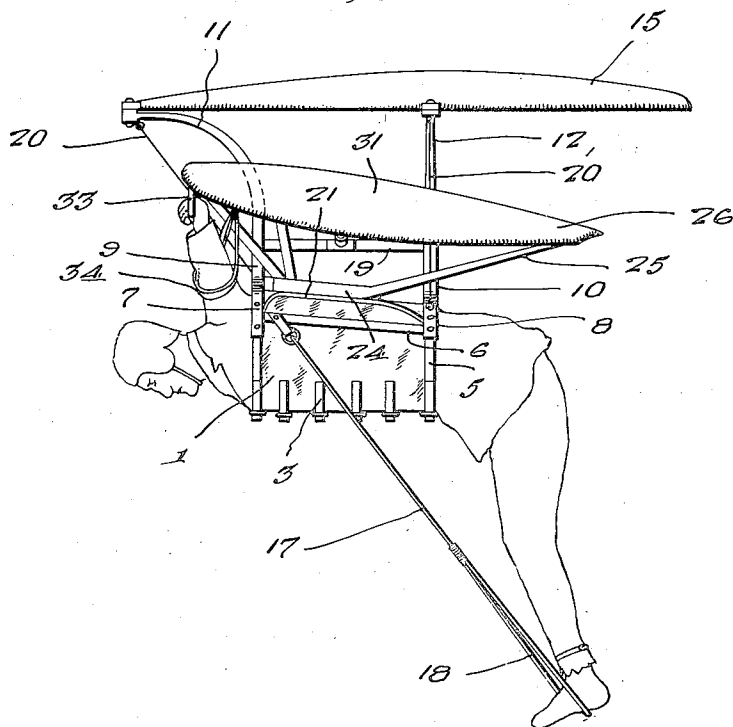
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M. FORCHIONE

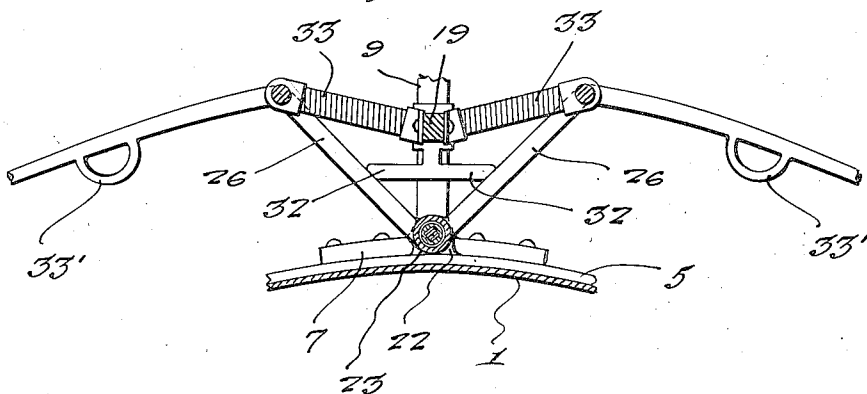
FLYING APPARATUS

Original Filed April 19, 1923 4 Sheets-Sheet 1

*Fig. 1.*



*Fig. 3.*



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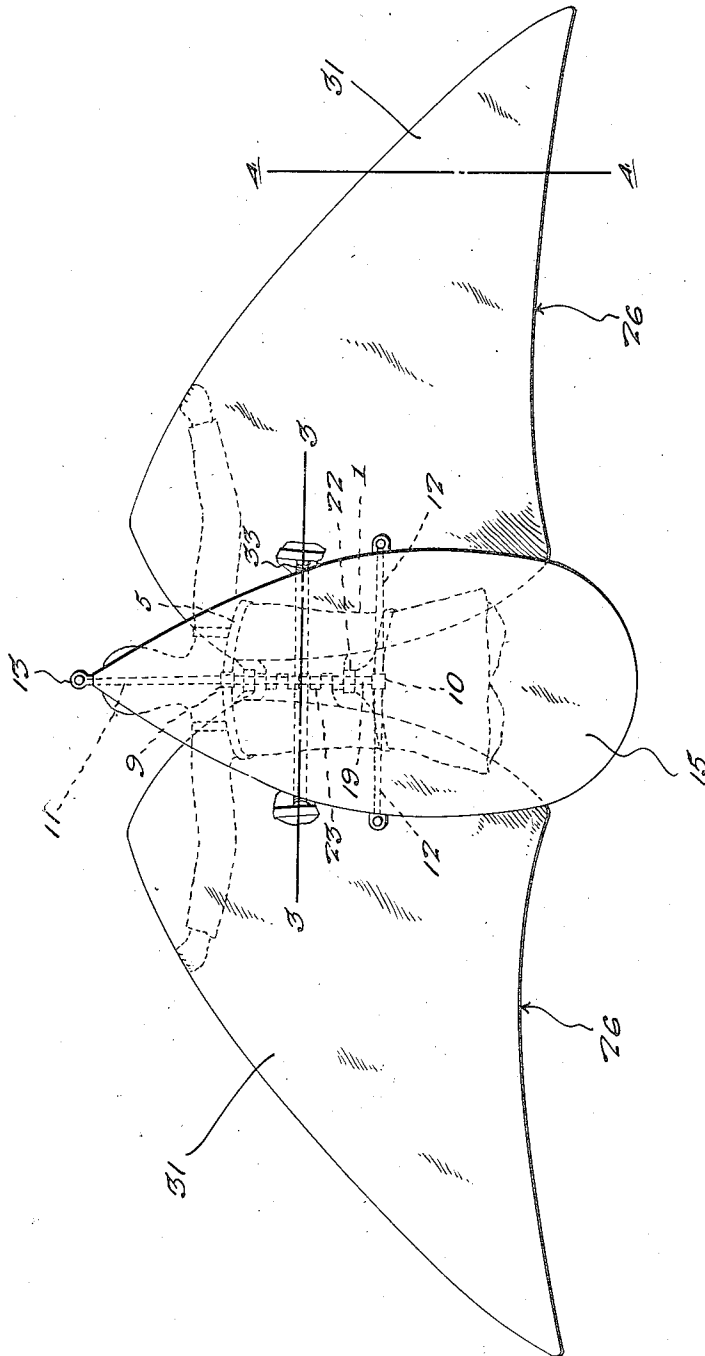
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FLYING APPARATUS

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Fig. 2.



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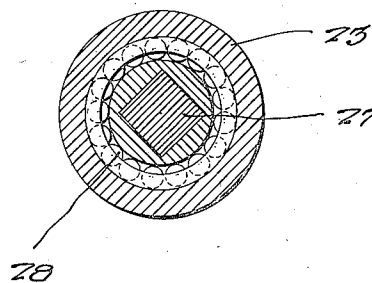
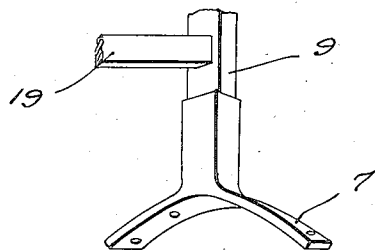
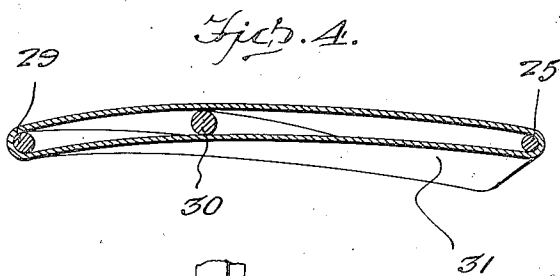
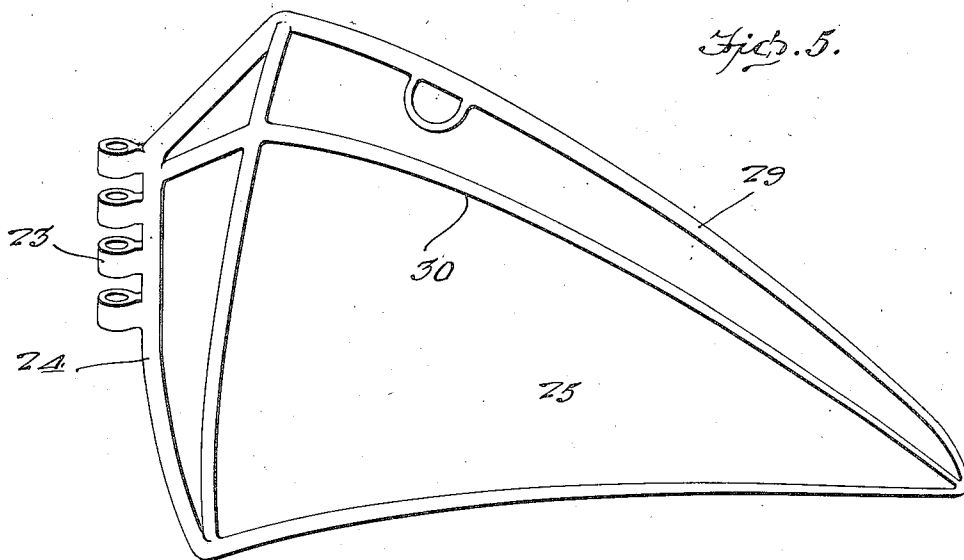
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M. FORCHIONE

FLYING APPARATUS

Original Filed April 19, 1923 4 Sheets-Sheet 3



*Fig. 9.*

*Fig. 8.*

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FLYING APPARATUS

Original Filed April 19, 1923 4 Sheets-Sheet 4

Fig. 6.

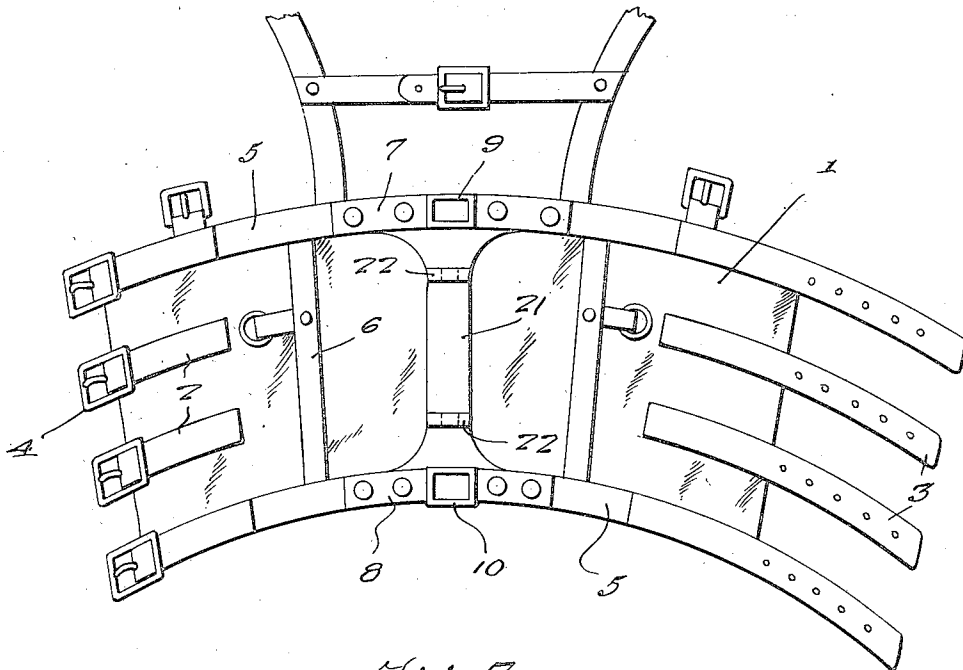
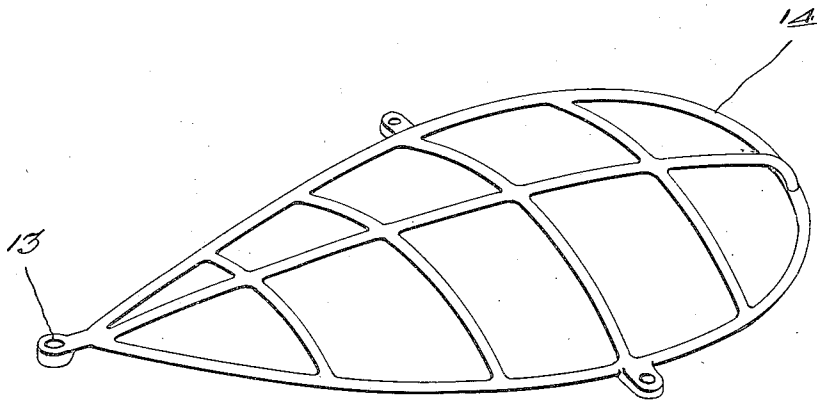


Fig. 7.

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# UNITED STATES PATENT OFFICE.

MICHELE FORCHIONE, OF CHICAGO, ILLINOIS.

FLYING APPARATUS.

Application filed April 19, 1923, Serial No. 633,157. Renewed July 7, 1924.

*To all whom it may concern:*

Be it known that I, MICHELE FORCHIONE, a citizen of Italy, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Flying Apparatus, of which the following is a specification.

This invention relates to improvements in flying machines of that type which is actuated by the muscular power of the person to whom the same is attached.

An object is to construct a flying machine that includes a body belt which is strapped around the body of the operator and which has foot stirrups associated therewith so that the operator's body may be retained at approximately a horizontal position, while suitably supported above the body belt there are pivoted wings designed to be moved by the arms of the operator in a manner to imitate the flight of birds, the said wings being spring influenced to normal horizontal position, and the body belt also supporting a stabilizing plane designed to be turned to varying inclinations by the bending of the body of the operator and whereby the machine is guided.

With the foregoing and other objects in view, the invention will be better understood from the following detailed description taken in connection with the accompanying drawings wherein:—

Figure 1 is a side elevation of the improvement with the operator strapped therein.

Figure 2 is a top plan view.

Figure 3 is a sectional view through the machine approximately on the line 3—3 of Figure 2.

Figure 4 is a sectional view through the machine approximately on the line 4—4 of Figure 2.

Figure 5 is a perspective view of one of the wings.

Figure 6 is a similar view of the stabilizing plane.

Figure 7 is a similar view of the body belt.

The remaining figures illustrate details.

The belt 1 of the improvement preferably includes a body portion of some soft but strong fabric which is provided, at its edges with a plurality of equi-distantly spaced straps 2 and 3 respectively, the straps 2 carrying buckles 4 whose tongues engage apertures in the straps 3. The belt, as disclosed in Figures 1 and 2 of the drawings, is designed to be strapped around the body of the

operator, the said belt being of a length approximately equalling the torso of the operator. The belt, at its ends is reinforced by bendable metallic strips 5 and longitudinal strips 6 connecting the said strips 5. To the end reinforcing metallic strips 5, at the center thereof there are preferably removably secured the forked ends 7 and 8 respectively of metallic posts 9 and 10 respectively. The post 9, which is arranged at the front of the belt, has its upper end rounded outwardly, as at 11, while the post 10 which is arranged at the rear of the belt has its upper end bifurcated to provide laterally curved arms 12. To the rounded end of the post 9 there is secured the reduced end 13 of a substantially elliptical frame 14, the side members of the frame being also connected to the ends of the arms 12. The frame is constructed of some suitable light material, metal preferred, including both longitudinal and transverse brace bars for the sides and ends thereof. The frame also is of a concavo-convex formation in both longitudinal and lateral section and has arranged thereon a fabric covering 15. The frame and its covering provide the stabilizing plane of the improvement as well as the rudder thereof, the flight of the machine in all directions being controlled by the bending of the body of the operator who is strapped in the belt.

Preferably secured to the longitudinal metallic reinforcing bar 6 at the sides of the belt 1 there are flexible members 17 that have their ends looped or have secured to the said ends stirrups 18 in which the feet of the operator are positioned.

The posts 9 and 10 are connected together by a brace rod 19, and preferably there are wire braces 20 respectively between the belt and the stabilizing plane 15.

The central reinforcing rod for the belt is, for distinction, indicated by the numeral 21 and is preferably of stronger metal than the side spacing and bracing members 16. The rod 11 is provided upon both of its sides with spaced knuckles 22 that receive therebetween knuckles 23 provided upon the inner rounded member 24 of the metallic frame 25 of the wings 26. Passing through these interengaging knuckles there is a removable pivot 27. Each pivot is in the nature of a cross sectionally rounded rod provided at spaced intervals with annular grooves that form raceways for anti-frictional balls 28, the said balls being disposed for contact-

ing engagement with the knuckles on the brace 21 and the knuckles on the frame 25.

I have stated that the inner member 24 of the frame 25 is rounded, but, of course, the knuckles 23 formed thereon are in a straight plane. The element 24 of the frame has an outwardly and downwardly rounded extension 29, while suitable arched brace bars 30 are integrally connected between the element 24 and the pointed end of the element 29 of the frame 25. Thus it will be noted that the outer ends of the wings are pointed. Suitable brace members are provided between the rods 29 and 30 and each frame 25 is covered with a canvas or light textile body 31.

Between the frames for the wings 26 and the brace member 21 there are preferably arranged stop means 32 which limit the swinging of the wings in an upward direction and also between the frame of the wings and the side braces 6 of the belt 1 there are spring means 33 which tend to force the wings in an upward direction. The outer elements 26 of the frame of the wings have secured thereto hand grips 33 engageable by the hands of the operator, and if desired suitable rests 34 may be secured to the wings for the forearms of the operator.

The aviator is strapped in the body belt with his feet engaged in the stirrups 18 and his hands gripping the elements 36 of the wings. The simple drawing of the arms of the aviator toward each other produces a downward stroke of the wings while by stretching out the arms, an upward stroke is effected. The spring means 33 serve as propelling means for the wings in the upstroke thereof, and as previously stated, the machine is guided by bending the body of

the aviator so as to bring the stabilizer and rudder 15 to different inclinations.

It is believed that the foregoing description, when taken in connection with the drawings will fully set forth the construction and operation of my improvement, but I wish it understood that I do not desire to be limited to the precise structural details herein set forth, but hold myself entitled to such changes therefrom as fall within the scope of what I claim.

Having described the invention, I claim:—

A flying machine comprising a fabric belt designed to be strapped around the body of an aviator, spaced posts secured to and projecting upward from the belt, a stabilizing plane and rudder secured to the posts, a reinforcing bar between the said posts, flexible elements connected to the sides of the belt and having stirrups for the feet of the aviator, a central reinforcement on the belt, aligned knuckles on the central reinforcement of the belt, wings having the inner members of their frame provided with knuckles to interengage with the first mentioned knuckles and with each other, a single pintle passing through the knuckles and pivoting both wings in place, anti-frictional elements carried by the pintle for engagement with all of the knuckles, hand grips on the wings engageable by the hands of the aviator, spring means secured to said reinforcing bar and the wings and influencing the wings in an upward direction, and means carried by said reinforcing bar and extending laterally thereof for limiting the movement of said wings in such direction.

In testimony whereof I affix my signature.

MICHELE FORCHIONE.