A. L. BATSLEER & S. B. THOMAS.

ANCHORING DEVICE FOR FLYING MACHINES.

APPLICATION FILED JAN. 19, 1911.

1,070,856. Patented Aug. 19, 1913.

4 SHEETS—SHEET 1.

Fig. 1.

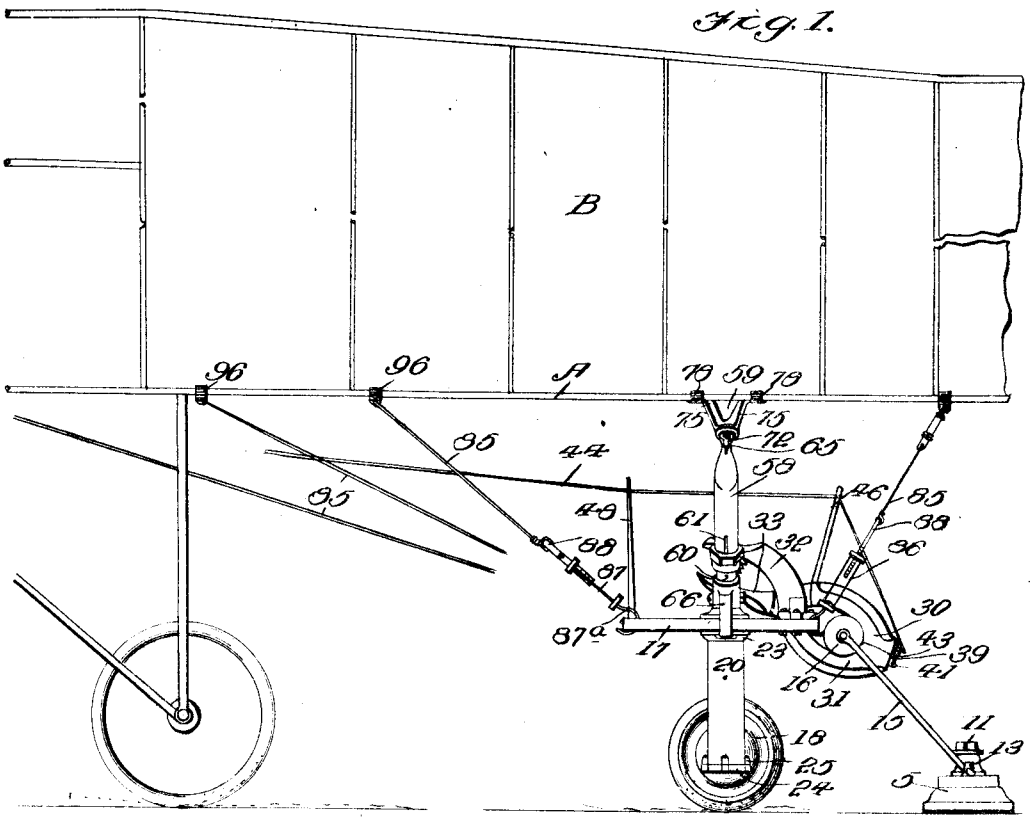


Fig. 10.

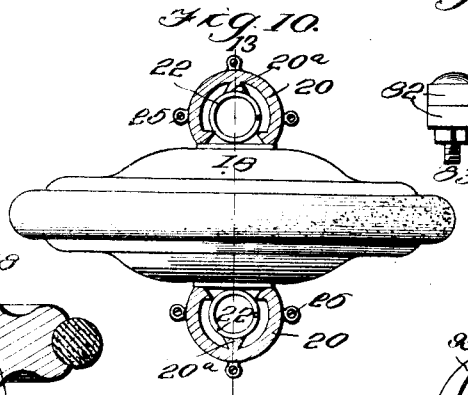


Fig. 17.

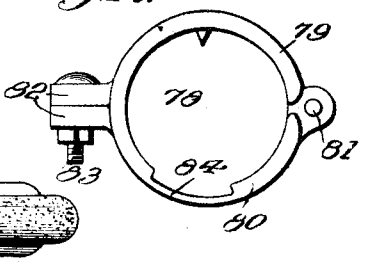


Fig. 9.

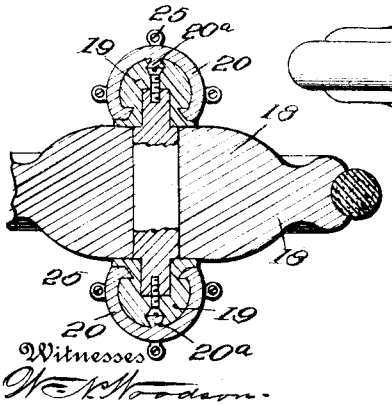
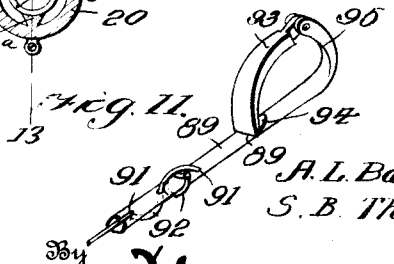


Fig. 11.



Witnesses

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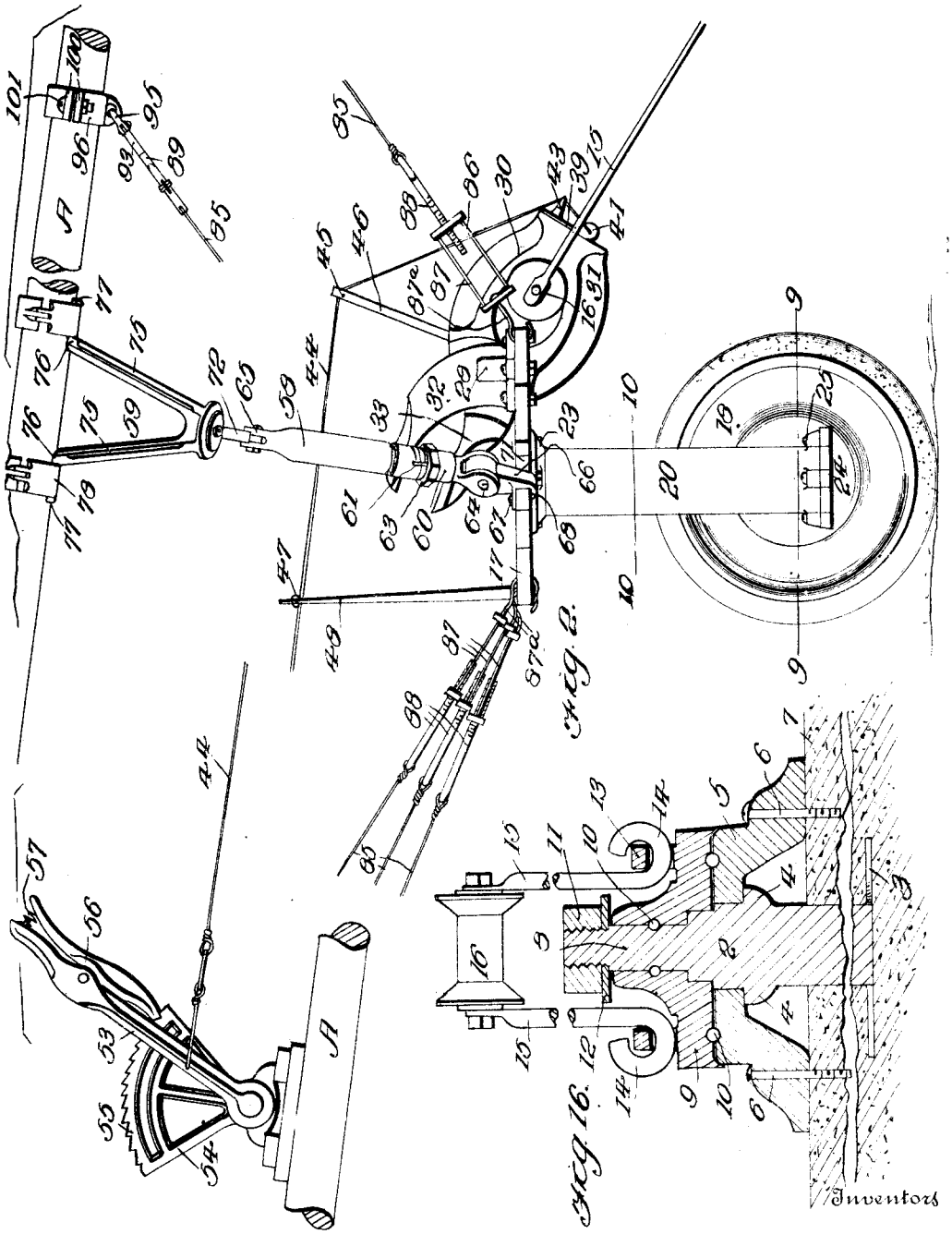


Fig. 2.

Fig. 16.

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4 SHEETS—SHEET 3.

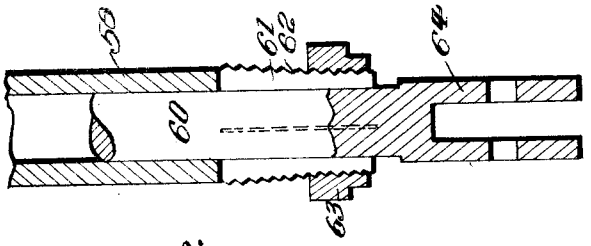


Fig. 6.

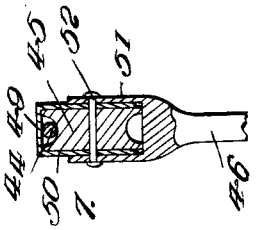


Fig. 7.

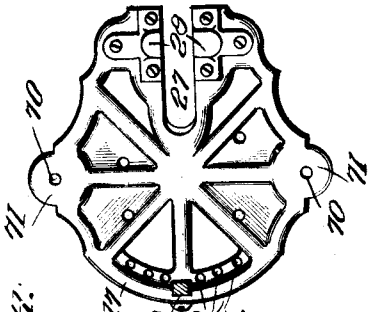


Fig. 5.

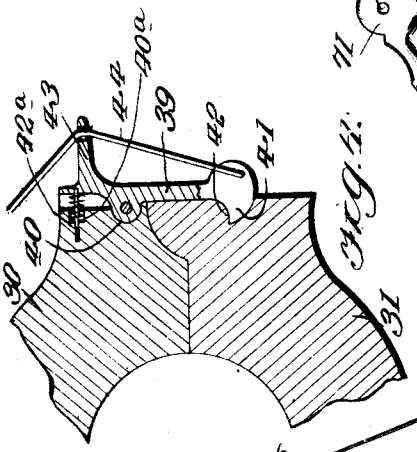


Fig. 4.

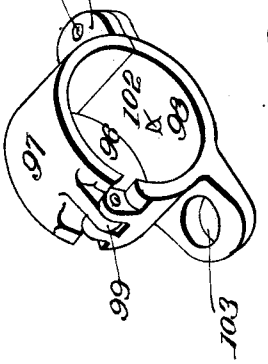


Fig. 8.

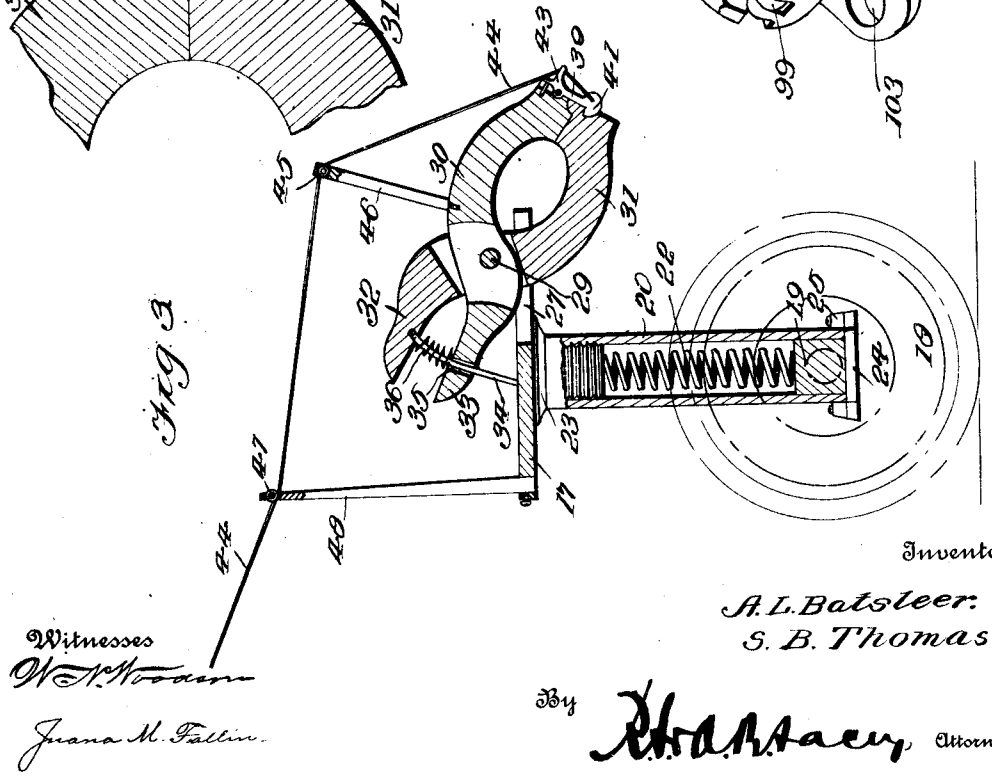


Fig. 3.

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4 SHEETS—SHEET 4.

Fig. 12.

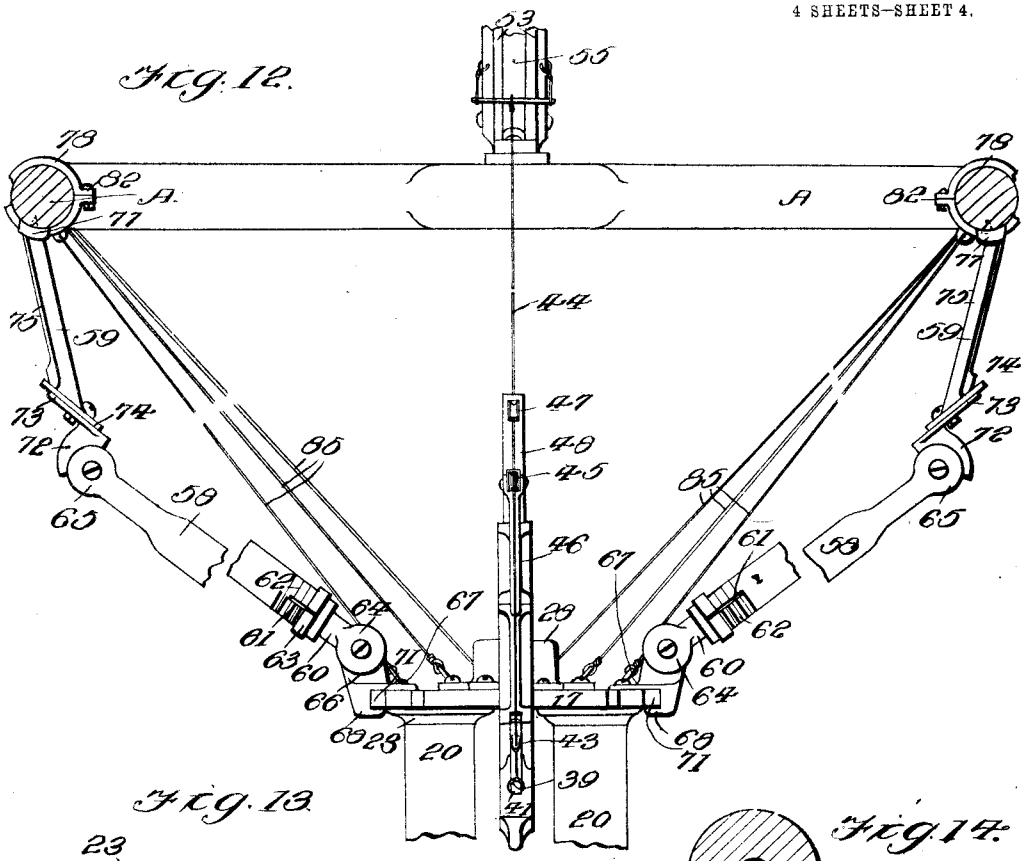


Fig. 13.

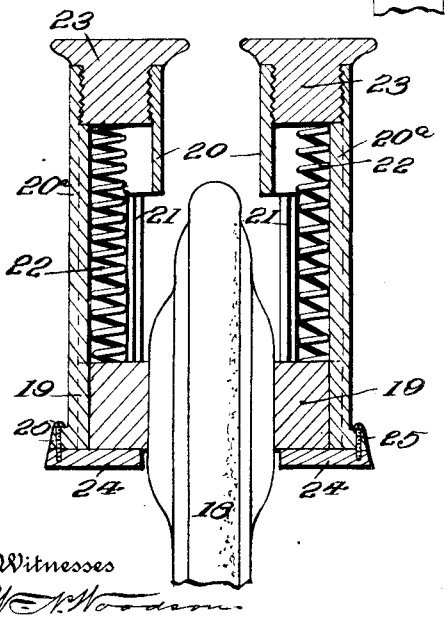


Fig. 15.

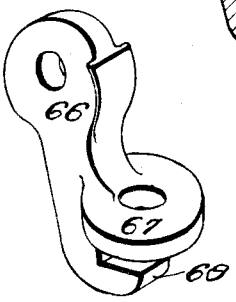
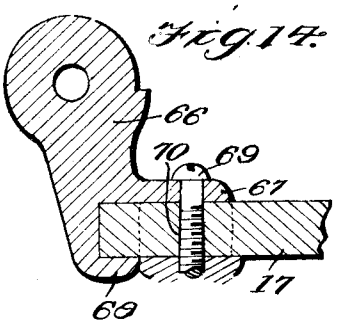


Fig 14.



Witnesses

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UNITED STATES PATENT OFFICE.

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ANCHORING DEVICE FOR FLYING-MACHINES.

1,070,856. Specification of Letters Patent. Patented Aug. 19, 1913.

Application filed January 19, 1911. Serial No. 603,482.

To all whom it may concern:

Be it known that we, AUGUST L. BATSLEER and SAMUEL B. THOMAS, citizens of the United States, residing at Manchester, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Anchoring Devices for Flying-Machines, of which the following is a specification.

Our invention relates to the art of aviation and particularly to anchoring devices whereby aeroplanes or balloons are held to the ground. In this art as at present practised, it is necessary to hold the aeroplane from forward movement until the engines driving the propeller have been speeded up to the required speed; the machine is then suddenly let go. To hold the machine from forward movement usually requires the services of a number of men and the machine is let go upon a signal from the aviator. This is objectionable, for one thing because it requires a number of parties to start the machine, and further because the control of the instant of release is not in the power of the aviator himself. Where a number of persons hold to the anchor rope, they will not release absolutely at the same instant and there is bound to be more or less drag upon the anchor rope and the control of the instant of release is therefore not positive and is not entirely and absolutely within the hands of the aviator.

Our invention is designed primarily to provide anchoring devices whereby the aeroplane, balloon or other flying machine may be held to a fixed point and in which the tripping of the anchor which releases the aeroplane from its anchored position is entirely within the control of the aviator.

A further object is to provide mechanism which will instantaneously and positively release the anchor when tripped.

Another object is to provide anchoring means permitting the flying machine to swing in a more or less horizontal plane with relation to the anchor and also permitting the machine to rise at its forward end so that a flying start may be made, if there is sufficient pressure against the planes.

A further object is to provide a flying machine with a shock-absorbing wheel, this shock-absorbing wheel being preferably mounted in connection with the anchoring devices and preventing the jar incident to the descent of the machine from damaging the relatively frail structure of the aeroplane and the mechanism forming the anchor engaging device.

A still further object is to provide means whereby the anchoring devices may be supported, either immediately beneath the longitudinal axis of the machine or to one or the other side thereof.

A further object is to provide adjustable braces for the anchoring devices, guy wires and tensioning devices therefor, and means in connection therewith whereby the braces and guy wires may be readily attached and positively engaged with the frame of the flying machine and may be adjusted thereabout.

A still further object is the provision of a swiveled anchoring member which may be solidly fixed in position and which will permit the flying machine to be easily turned in accordance with the direction of the wind.

Other minor objects of our invention will be set forth in the accompanying specification.

Our invention is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of a portion of an aeroplane showing our anchoring devices applied thereto. Fig. 2 is an elevation of the anchoring devices on an enlarged scale, the supporting bars of the frame being broken away. Fig. 3 is a section of the standard supporting the shock-absorbing wheel, the base plate carried thereby and the anchor gripping mechanism. Fig. 4 is an enlarged sectional view of the extremities of the gripping jaws showing the tripping latch. Fig. 5 is a plan view of the base plate upon which the gripping jaws are mounted. Fig. 6 is a longitudinal sectional view of one of the extensible braces. Fig. 7 is a detail sectional view of the extremity of the pulley and pulley support over which the release wire passes. Fig. 8 is a perspective view of one of the collars whereby the guy wires are connected to the frame. Fig. 9 is a cross section of the shock-absorbing wheel on the line 9—9 of Fig. 2. Fig. 10 is a cross section of the standard supporting the shock-absorbing wheel on the line 10—10 of Fig. 2. Fig. 11 is a detail perspective view of one of the guy wire hooks. Fig. 12 is a rear elevation of our mechanism, the frame bars being shown in section. Fig. 13 is a vertical sec-

tion on the line 13—13 of Fig. 10. Fig. 14 is a detail sectional view of the joint between the sections of the braces shown in Fig. 12. Fig. 15 is a perspective view of said joint. Fig. 16 is a vertical diametrical section of the anchor embedded in the ground. Fig. 17 is a detail view of one of the clamps by which the legs of the hanger are secured to the frame bars.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to these drawings and particularly to Figs. 1 and 2, it will be seen that our invention contemplates supporting upon the aeroplane an anchor gripping device which includes opposed gripping jaws which are adapted to be closed upon the anchor to engage therewith and which may be released by releasing a latch device, and that in connection with these jaws we provide an anchor firmly held in position and having a projecting bail or like member with which the gripping jaws engage.

Referring now to Figs. 1 and 16 it will be seen that the anchor comprises a post 2 adapted to be embedded to any extent in the ground and composed of any suitable material, preferably metal, and having a laterally projecting flange 3 at its base. The post 2 is shouldered at 4 and fitting over this shoulder and resting thereon is an annular base plate 5. This base plate is provided with bolts 6 which are inserted in the concrete foundation 7 within which the post 2 is embedded. It will thus be seen that the post 2 and the plate 5 are rigidly held in engagement with each other. While it is preferable to construct them in two parts we may construct them in one piece. The upper end of the post 2 is reduced as at 8 and surrounding this reduced portion and resting upon the upper face of the plate 5 is a cap 9. Ball bearings 10 are provided between the cap and the face of the base 5 and may also be provided if desired between the cap and the reduced portion of the post. This cap 9 has free rotation upon the upper end of the post but is held from any outward movement with relation to the post by means of a nut 11 and a washer 12. The cap 9 is provided with upwardly projecting ears 13, these ears being perforated for the passage of the angular extremities 14 of a bail 15. This bail 15 is formed at its forward end with the transversely extending roller 16. It will be seen that by this construction the cap 9 may have free rotation around the post 2 and that the outer end of the bail may rise and fall to take any desired angular relation with regard to the post 2. The mechanism for gripping the roller 16 is preferably mounted upon a base plate 17 which is held in fixed relation to the framework of the machine by means of struts, braces and guy wires and which supports a shock-absorbing wheel 18. As illustrated in Fig. 8, the base plate 17 is approximately circular in plan and is preferably of a skeletonic form so as to secure a minimum weight with a maximum of strength. The wheel 18 is rotatably supported in suitable journal bearings 19 which are slidably mounted in opposed tubular standards 20. These standards are cut away on their inside faces as at 21 to allow the projection of the journal bearings 19, and disposed within the tubular standards are the coiled springs 22 which bear at one end against the journal boxes 19 and at their other end against the cap plugs 23 which are screw threaded into the upper ends of the tubular standards 20. These cap plugs are held to the base plate 17 by means of stud bolts or in any other suitable manner. The lower ends of the tubular standards 20 are closed by the plates 24, held in place by a series of circumferential bolts 25 passing through radially projecting lugs on the plates 24 and the lower ends of the standards. It will be obvious that any force bearing against the wheel 18 will tend to force the wheel upward against the tension of the springs 22 and that thus the springs 22 will take up any shock.

As illustrated in Fig. 9 the journal bearings 19 are formed with a plurality of longitudinally extending grooves and the inner faces of the standards 20 are provided with a plurality of longitudinally extending tongues 20^a which fit in these grooves. One or more of these tongues is preferably dovetail in shape, as is the corresponding recess in the journal bearing. These coacting tongues and grooves act to prevent any play between the parts 19 and 20 and guide the journal bearings 19 in their travel up and down the standards. The end attained by these coacting tongues and grooves is to give a firm and steady bearing for the journals 19 within the standards.

The rear end of the base plate 17 is formed with a radially disposed slot 27. Mounted at each side of this slot are the bearings 28 for the pivot pin 29 of a pair of gripping jaws 30 and 31. These jaws are best seen in Fig. 3. The jaws 30 and 31 are curved so that when closed they will embrace the roller 16 on the bail 15 and that when opened they will permit the roller to slip easily out from between the jaws. The pivot pin 29 not only forms the pivot for the jaws but also forms an axis from which the jaws may have a limited turning movement so that they may drop down into an almost vertical position or may move up to the position shown in Fig. 3 where the spring guiding pin of the jaw 31 contacts with the base plate 17 and lim-

its any further upward movement. Each of the jaws is substantially S-shape in form and extends beyond the pivot 29 to form the tails 32 and 33. The tail 32 of the jaw 31 is provided with an arcuate guide pin 34 which passes through an opening 35 in the tail 33, and disposed between the tails 33 and 32 is the coil spring 36 which surrounds the pin 34. This spring acts to force the jaws open and is of such strength that when the jaws are released they will immediately fly open. The jaws are held when closed from any opening movement by means of a latch 39 illustrated in Fig. 4. This latch is provided with an ear 40 which is pivotally attached to the end face of the jaw 30 and the lower extremity of the latch is provided with a tooth 41 engaging in a recess 42 formed in the jaw 31. The latch 39 extends above the pivot 40 and bears against a spring 40^a supported at one end in a socket 42^a in the end face of the jaw 30. The upper extremity of the latch 39 has the outwardly projecting arm 43 over which the latch releasing connection passes.

The latch releasing connection 44 is preferably of wire and is attached at the lower end of the latch 39, passes up over the arm or strut 43 and then extends upward and forward and over a pulley wheel 45 supported on an arm or standard 46 which is fast to the jaw 30. The wire then passes forward and upward and beneath a guide pulley 47 carried by an upwardly extending standard 48 projecting from the forward end of the base plate 17. In order that the connection 44 may not become detached from the pulley 45 and may not become wedged between the side face of the pulley and the frame upon which the pulley is supported, we preferably provide the pulley 45 with the guide strip 49 which extends over the top of the pulley and has downwardly extending arms 50 which extend between the arms 51 of the bifurcated end of the standard 46. The bolt or pin 52 upon which the pulley is supported passes entirely through the arms 51, the arms 50 and the pulley. It will be seen from Fig. 7 that it will be impossible for the connection 44 to get out of engagement with the pulley or to become jammed. The same construction may be used for the pulley 47. The connection 44, which is preferably of fine and very strong wire, extends forward on the aeroplane to any suitable point, preferably in front of the aviator and is there attached to a releasing lever 53, illustrated in Fig. 2. This releasing lever is pivotally mounted upon one of the frame bars A in any suitable position as before stated and is pivoted to an arcuate segment 54 which is provided with ratchet teeth 55. The lever 53 is preferably bifurcated so as to extend down on each side of the rack segment 54 and pivoted to the lever is the pawl 56 whose lower end engages with the ratchet teeth 55 and whose upper end is urged outward by means of a spring 57. When the upper end of the pawl 56 is moved inward the pawl will release its engagement with the teeth 55. The pawl will, of course, permit the lever to be moved forward over the ratcheted edge of the segment but will prevent any rearward movement of the lever until the pawl is tripped.

The operation of the anchor tripping devices is as follows. When the aviator takes his seat in the machine, the jaws 30 and 31 are, of course, closed tightly upon the spool or roller 16 and latched by means of the latch 39. The lever 53 is then moved forward until the connection 44 is pulled taut so that a very slight further movement of the lever will act to release the latch 39 and permit the jaws to open under the impulse of the spring 36. After the aviator has taken his place in the machine and the engine has been speeded up so as to secure the requisite power from the propeller blades, and when all is ready for the start, the aviator presses forward upon the lever 53, either with his hand or foot and a very slight forward movement of the upper end of the lever through the connection 44 draws upon the latch 39 and releases the jaws. The machine then springs forward and as it does so the spindle or roller 16 is withdrawn from the open jaws. The jaws being pivoted, permit a very easy withdrawal of this spindle 16. It will be noticed that the arm or strut 43 extends out at right angles to the latch 39 and that as a consequence any strain upon the connection 44 tends to turn the latch. There is no pull against the pivot of the latch but any pull is directed at an angle to the face of the latch and hence a very slight force applied to the lever 53 and the connection 44 will act to release the latch. When at the end of the flight it is desired to re-anchor the machine, the pawl 56 is released and the lever 53 moved rearward, thus slackening the tension on the wire 44 and permitting the jaws to be closed against the force of the spring 36.

As a means for bracing and supporting the base plate 17 from the frame or chassis of the machine, we preferably provide the telescopic braces 58 and the hangers 59, illustrated in Figs. 2, 6 and 12. As shown in Figs. 12 and 6, the braces 58 are formed in two parts, the main portion 58 being tubular. Telescopically mounted within the main portion 58 is the solid post 60. The lower extremity of the tubular section 58 is split as shown in Fig. 2 by a plurality of kerfs 61. This split lower end of the tubular section 58 is tapered and screw threaded as at 62 and engaging with these

screw threads is a lock nut 63, as illustrated in Fig. 6. By screwing this lock nut up, the tongues formed by the kerfs 61 will be forced inward to a very rigid frictional contact with the post 60 and will hold the post in any adjusted position. The post 60 is telescopically mounted within the tubular portion 58 and therefore may be adjusted longitudinally to any required degree. The lower end of the post 60 is bifurcated so as to provide the opposed ears 64, while the upper end of the tubular section 58 is also bifurcated as at 65. The ears 64 are pivoted to a knuckle 66 illustrated in Figs. 14 and 15 which is formed with the angularly projecting ear 67 and with the angularly projecting lug or lip 68 which is spaced from the under side of the ear 67. The ear 67 is perforated for the passage of a bolt 69. This bolt 69 passes through an opening 70 formed in the base plate 17. There are two of these openings 70 located at opposite sides of the base plate 17 and the adjacent edges of the base plate are curved in the arc of a circle as at 71, this arcuate edge 71 being concentric to the openings 70. The lip 68 takes under the edge of the arcuate lug 71, while the ear 67 fits over the top of the same and the bolt 69 passes down through the ear 67 and through the opening 70. Thus the knuckle 66 is pivotally mounted upon the arcuate lug 71 and may be adjusted rotatively thereon in any desired angular direction.

The upper bifurcated end 65 of the tubular member 58 is pivotally attached to a knuckle 72 which carries upon it the angularly projecting plate 73 which has a rotative engagement with a circular plate or web 74 forming the apex of the hanger 59. The hanger 59 has diverging legs 75 which at their junction are formed integral with the circular plate 74 as previously described. This plate 74 is set at an angle with the legs 75 as illustrated in Fig. 12. Each of the legs 75 at its upper end is angularly bent as at 76 and the extremity of this angularly bent portion 76 is bent outward so as to provide a terminal lug 77. Clamps 78 clamp these angular extensions 77 to the frame bars A of the body. These clamps as shown in Fig. 17 are formed in two pivoted sections 79 and 80 pivoted to each other at 81 and having projecting opposed lips 82 on their free ends through which passes a tightening screw 83.

The section 80 of the clamp is recessed as at 84 to accommodate the angularly bent end 77 over which it passes. The upper section 79 of the clamp is provided with a tooth which, when the clamp is closed, is forced into the wood of the frame rod A. It will be seen that this construction of clamp holds the hanger very solidly and rigidly to the bar A and absolutely prevents any shifting of the hanger upon the bar, either around the bar or longitudinally therealong. It will also be seen that the provision of knuckles 66 and 72, each of which is pivoted to the extremity of the brace 58, 60 and each of which is rotatably mounted, one upon the hanger 59 and the other upon the plate 17, provides universal joints which permit the brace 58 to be shifted to a large number of positions and that by changing the angular directions of the braces 58 and shortening or lengthening the braces by shifting the section 60 thereof into or out of the section 58, the plate 17 may be set in any desired relation to the chassis of the aeroplane. Thus the plate 17 may be set as illustrated directly in the median plane of the machine, or it may be set beneath either one of the side bars A or in any intermediate plane. The plate 17 with the anchoring device and the shock-absorbing wheel may also be set forward or rearward as desired so as to place it in the most effective position with relation to the other parts of the machine. It will be obvious that in a flying machine all of the parts shall be correctly balanced and hence it is necessary that the plate 17 with the parts carried thereby should be adjustable in all directions. The plate 17 with the parts carried thereon is also rigidly held in proper relation to the frame of the machine by means of guy wires 85. There may be as many of these guy wires as desired and they extend out radially from the plate 17 to various desired portions of the frame. We have shown for the purposes of illustration, however, two guy wires extending out from the rear end of the plate 17, one on either side of the gripping jaws 30 and 31 and a plurality of guy wires extending radially outward from the front of the plate 17 to various points along the frame bars A. All of these guy wires are alike and hence a description of one of the guy wires and the attaching means therefor is applicable to all of the guy wires.

The wires 85 at their inner ends are each connected to a turn buckle 86, illustrated in Fig. 2. The turn buckle is composed of a rotatable section 87 having a screw threaded engagement with an I-bolt 88 to which the guy wire 85 is immediately attached. The rotatable section 87 is swiveled to a hook 87ª which passes through one of the series of openings 90 formed in the margin of the plate 17. By tightening up on these turn buckles it will be obvious that the guy wires will be tightened. Each of the guy wires at its outer end is attached to a hook 89 illustrated in Fig. 11. The shank of the hook 89 is formed with spaced perforations 91 through which the end of the guy wire is passed. The extremity of the guy wire is then wrapped around the shank of the hook as at 92. We have found in practice that

this forms an absolutely rigid connection between the hook and the guy wire so that the guy wire cannot possibly pull away from the hook. The extremity of the hook is overturned upon itself and is bifurcated, and pivoted between the bifurcated extremity is a bill 93. The shank of the hook is formed with a notch 94 with which the free end of the bill engages when the bill is snapped inward. When once engaged it is very difficult to disengage the bill 93 from the notch 94 and the bill will remain in engagement with the shank until the bill is forced out by means of some instrument.

It is to be noted that the angular end 95 of the hook is not curved over to any great degree but is only slightly curved so that the bent portion 95 extends almost at a right angle to the shank of the hook. This is to permit the hook, when the bill is released, to be easily withdrawn from its engagement with the eye of a clamping collar 96 illustrated in detail in Fig. 8. This clamping collar is formed in two sections, 97 and 98, pivoted to each other as at 99 and formed with the lips 100 upon their free ends, these lips being perforated for the passage of a clamping bolt 101 whereby the sections may be drawn into tight engagement with the frame bar A of the chassis. One of the sections, illustrated as the section 98, is provided with a prong 102 which will be forced into the wood of the frame bar A when the clamping collar is closed upon the frame bar. This section 98 is also shown as being provided with an eye 103 with which the hook 95 engages. All of the guy wires 85 are attached to these clamping collars 96. These collars may be easily adjusted along the frame bars and when clamped are positively fixed upon the frame bars. By this means the wires 85 may be tightened to any required degree of tension so as to secure an absolute bracing of the base plate 17 and its attached parts, and so as to prevent any chance of deflecting the struts or braces 58, 59 and 60.

While we have described the details of our construction and shown it as applied to the main frame B of a flying machine, we of course do not wish to be limited to these details nor to the exact disposition of the parts illustrated in Fig. 1 as the device is adapted and intended to be applied to any desired portion of the flying machine and to be located at any convenient position thereon. The details of the construction may also be varied in many ways without departing from the spirit of the invention and in order to accommodate the device to various makes of machine. It will be seen that we have provided an anchoring device which will securely hold the flying machine from movement while the engines are speeded up to the required point and in which the anchor may be tripped instantaneously by the aviator himself and furthermore, that this anchoring device is so constructed as to be adjustable upon the frame of the machine and so braced that when once adjusted there will be no movement of the various parts. The anchoring device is guarded from shock by means of the shock-reducing wheel and the wheel will hold it supported from the ground when the machine ascends so that there will be no chance of breaking the parts forming the anchoring device.

While our device is particularly adapted to flying machines of the heavier-than-air type, where it is necessary that the motor should be speeded up before the machine can rise, we do not wish to be limited to this as it is obvious that the anchoring device can also be used with balloons and hence wherever the term flying machine is used it is intended to include, not only aeroplanes and like forms of flying machine, but also lighter-than-air machines.

What we claim is:

1. The combination with a flying machine, of an anchor gripping device pivotally mounted therein for movement in a vertical plane and including opposed jaws, means for yieldingly holding the jaws in a closed position, and means for urging said jaws to an opened position.

2. The combination with a flying machine, of an anchor engaging device, including opposed jaws, resilient means acting to open the jaws, a latch device for holding the jaws closed, and means on the machine for disengaging the latch device.

3. The combination with a flying machine, of an anchor engaging device, including opposed jaws, a spring forcing the jaws open, a latch holding the jaws closed against the action of the spring, and means for tripping the latch.

4. The combination with a flying machine, of an anchor engaging device, including opposed jaws, a spring for forcing the jaws open, a latch holding the jaws closed, a flexible connection extending from the latch, and a lever operatively engaged with the flexible connection.

5. The combination with a flying machine, of an anchor engaging device, including opposed jaws rotatable upon a common pivot, a spring for opening the jaws, a latch for holding the jaws closed, and means for tripping the latch.

6. The combination with a flying machine, of an anchor engaging device, including opposed jaws, a spring for forcing the jaws open, a spring-actuated latch holding the jaws closed, a flexible connection extending from the latch, and an operating device to which the flexible connection is attached.

7. The combination with an anchor hav-

ing a member mounted for movement in a plurality of planes, of an anchor engaging device mounted upon a flying machine and including opposed jaws adapted to engage said member, said jaws being pivoted for movement in a vertical plane, a spring for forcing the jaws open, a latch for holding the jaws closed, and means for tripping said latch.

8. The combination with a flying machine, of an anchor engaging device, including opposed pivoted jaws, both of said jaws being simultaneously rotatable in a vertical plane, a spring for forcing said jaws open, a latch mounted on the free end of one jaw and engageable with the other jaw to hold the jaws closed, a strut projecting from one of the jaws, and a flexible connection passing over the strut and engaged with the latch.

9. The combination with a flying machine, of coacting gripping devices, a base plate upon which said devices are mounted, means for releasing said anchor gripping devices, and means for adjustably supporting the base plate from the frame of the machine.

10. The combination with the main frame of a flying machine, of a base plate, supporting extensions from the base plate engaging said main frame, coacting jaws mounted upon the base plate and having free rotatable movement in a vertical plane, said jaws being pivotally connected to each other, means for urging said jaws to an opened position, means for holding said jaws in a closed position, and means for releasing said holding means to permit the jaws to open.

11. The combination with the main frame of a flying machine, of a base, adjustable supports extending from said base and engaging said main frame, coacting jaws pivotally connected to each other and pivotally mounted upon the base for free simultaneous movement in a vertical plane, means urging said jaws to an opened position, means for holding said jaws closed, and means for releasing said holding means to permit the jaws to open.

12. The combination with a flying machine, of coacting anchor gripping devices, a base plate, extensible braces projecting from said base plate, and means adjustably mounted upon the ends of said braces for engaging the frame of the machine.

13. The combination with a flying machine, of coacting anchor gripping devices, a base plate upon which said devices are mounted, extensible braces rotatably mounted upon the base plate, and hangers engaging the frame of the machine and having rotative engagement with the braces.

14. The combination with a flying machine, of coacting anchor gripping devices, a base plate, extensible braces, a universal joint between the lower ends of said braces and the base plate, hangers having tubular connection with the frame of the machine, and a universal joint between said hangers and the upper ends of the braces.

15. The combination with a flying machine, of coacting anchor gripping devices, a base plate, knuckles rotatably mounted upon said base plate, a brace section pivotally mounted upon said knuckles, a brace section having sliding and rotative engagement with the first named brace section, a knuckle pivoted to the upper end of each of the brace sections, and hangers pivoted to the knuckles for movement in a plane at right angles to the plane of rotation of said knuckles.

16. The combination with a flying machine, of a base plate supported below the same, coacting gripping jaws pivotally connected to each other and pivotally mounted upon the rear end of the base plate, a spring for throwing said jaws open, a latch upon one jaw engaging the other jaw to hold the jaws closed, a lever mounted on the forward portion of the machine, an arcuate rack over which the lever moves, a connection between the lever and said latch, and means engaging the rack for holding the lever set in any desired position.

In testimony whereof, we, respectively affix our signatures in presence of two witnesses.

AUGUST L. BATSLEER. [L. S.]
SAMUEL B. THOMAS. [L. S.]

Witnesses to Batsleer:
JAMES A. BRODERICK,
GIRARD PELLENS.

Witnesses to Thomas:
FREDERIC B. WRIGHT,
W. N. WOODSON.