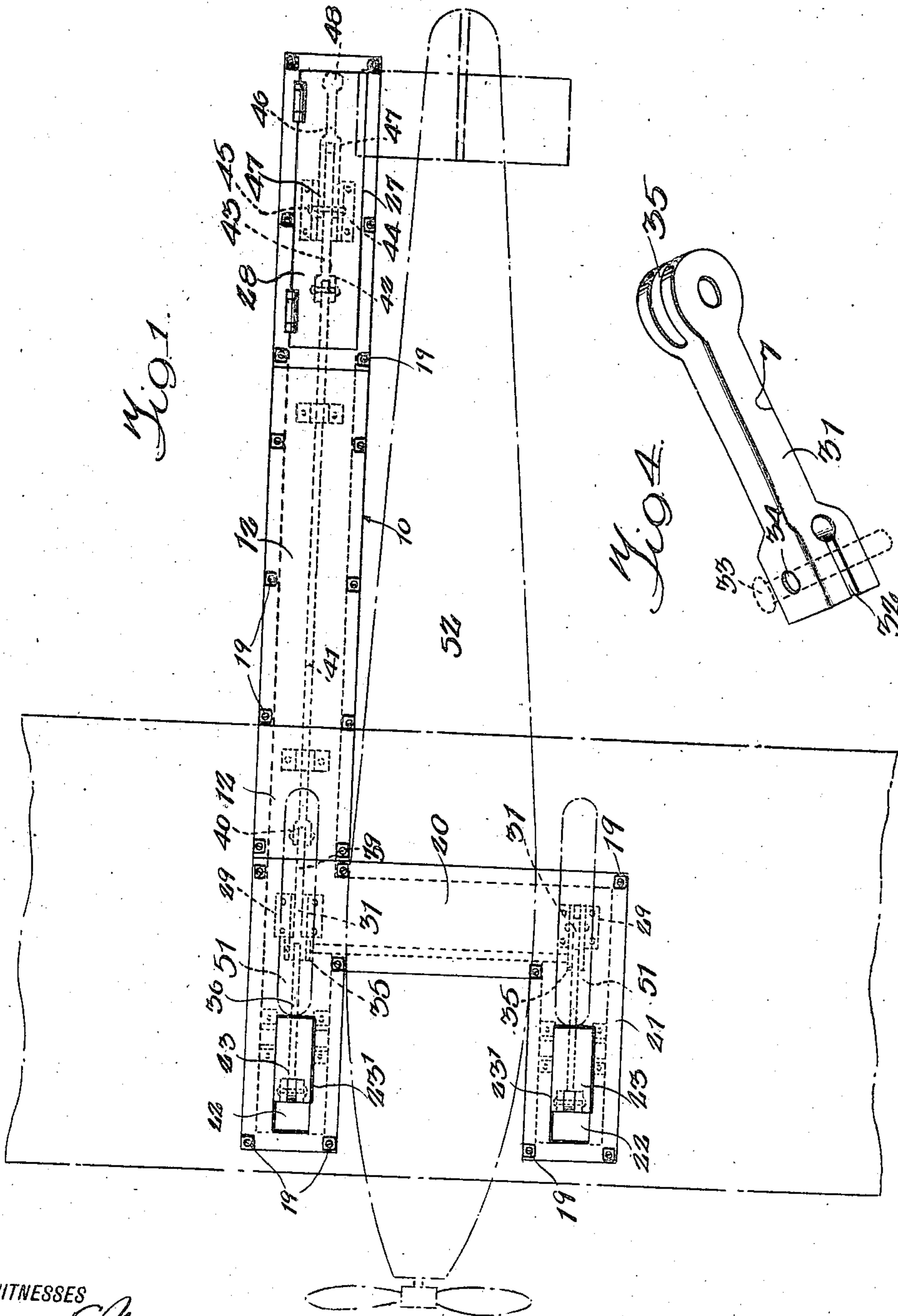


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J. W. BEASLEY, JR.
AEROPLANE BLOCK FOR TAKE-OFF STANDS.
FILED APR. 5, 1922.

1,440,812.

2 SHEETS—SHEET 1.



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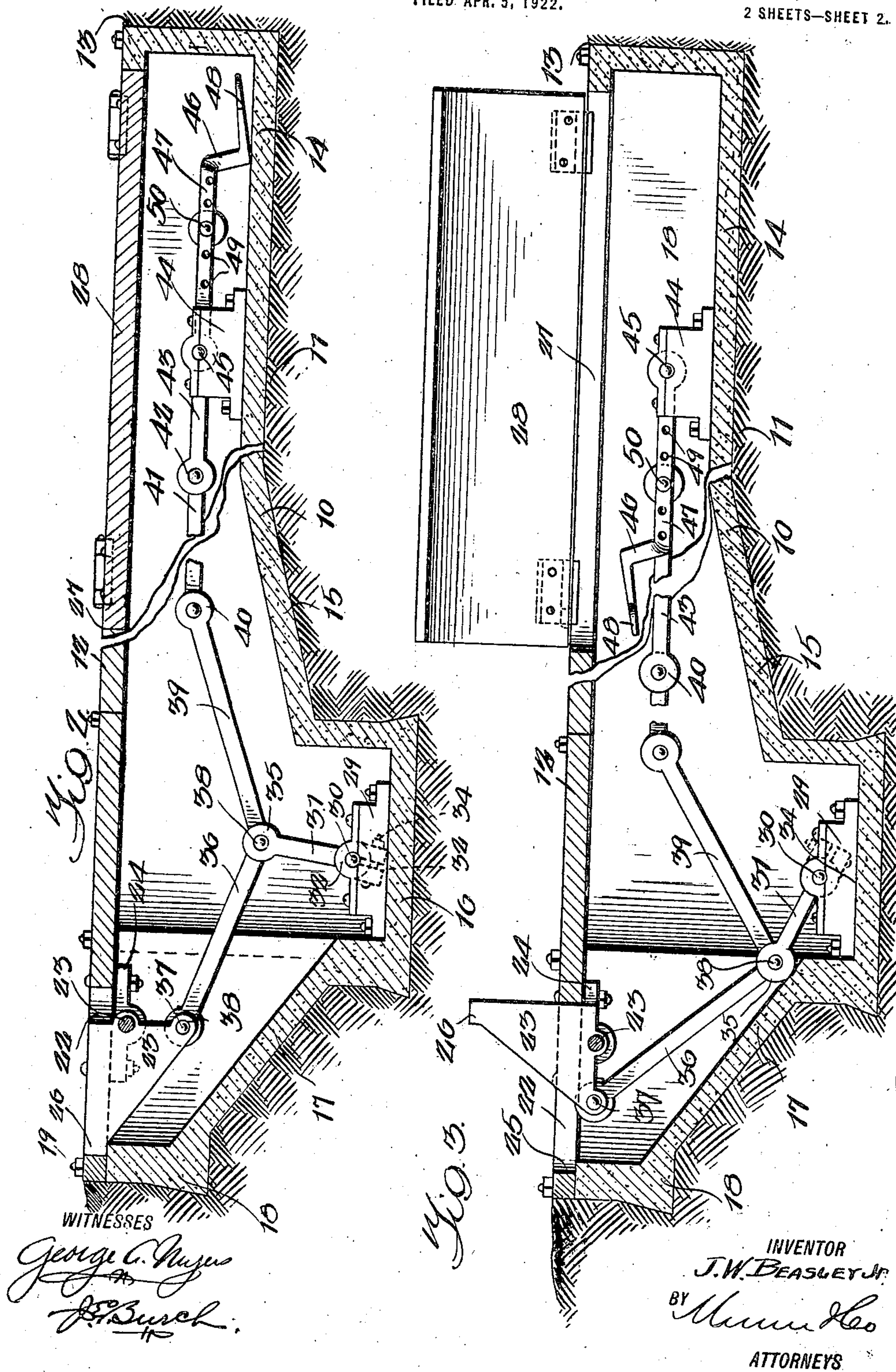
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UNITED STATES PATENT OFFICE.

JOHN W. BEASLEY, JR., OF LOS ANGELES, CALIFORNIA.

AEROPLANE BLOCK FOR TAKE-OFF STANDS.

Application filed April 5, 1922. Serial No. 549,752.

To all whom it may concern:

Be it known that I, JOHN W. BEASLEY, JR., a citizen of the United States, and a resident of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Aeroplane Blocks for Take-Off Stands, of which the following is a specification.

This invention relates to improved means whereby aeroplanes may be started in flight or tested while standing still without the necessity of persons holding the same while the propeller is in operation, in order to prevent advancement thereof, thus obviating danger to attendants, and it consists of an improved block or take-off stand by which the operation of the motor may be tested while retaining the aeroplane against moving during the driving of the propeller, also to permit the release thereof by an attendant disposed at the rear of the machine and at a point where injury is not likely to occur, thus facilitating the starting of the machine.

A further object of the invention is to provide an aeroplane block or take-off stand which constitutes a safety appliance and to take the place of blocks now used to hold back the aeroplanes when they are being tested out on the ground, the machine serving to put the blocks under the wheels of an aeroplane and release the same, thereby obviating the necessity of mechanics putting the blocks under the wheels of the aeroplane with the propeller running and thereby in constant danger of being injured or killed. The present invention obviates the necessity of such dangerous practices and permits the same work to be manipulated from the back or tail end of the aeroplane in much the same fashion as throwing the switch of a railroad track clear of all moving parts.

Other and further objects of my invention will become readily apparent to persons skilled in the art, from a consideration of the following description when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a fragmentary plan view showing the improved aeroplane block or take-off stand with an aeroplane in position, the latter being shown in dotted lines.

Figure 2 is an enlarged longitudinal sectional view showing the device in an inoperative position when the aeroplane is released.

Figure 3 is a similar view but showing the

device in an operating position for holding an aeroplane for testing or for starting, and

Figure 4 is a perspective view of one of the jointed connections between the operating lever and the blocks.

In carrying out the invention and referring more specifically to the drawings in which like reference characters designate corresponding parts throughout the several views, the improved aeroplane block or take-off is shown as embodying an elongated well 10 imbedded in the ground as indicated at 11 so that the top 12 thereof will be flush with the ground surface 13. The bottom portion 14 is provided with a forwardly inclined wall portion 15 terminating in a depression 16 the bottom of which is located on a horizontal plane. In front of the depression there is disposed an inclined portion or abutment 17 the purpose of which will be hereinafter more fully set forth. The surrounding vertical wall 18 receives thereon the top portion or plate 12 which is bolted or otherwise secured in position as indicated at 19, the same having a lateral portion 20 directed forwardly as indicated at 21, thus providing a spaced leg portion at the front in the form of a substantially H shaped well structure. In the top wall 12 adjacent to the front ends of leg portions of the well or H there are provided rectangular elongated openings 22 through which the blocks 23 are adapted to operate upon the pivots 23' running transversely through said leg portions and having suitable bearings therein or at the sides. The bearings are preferably indicated at 24 being bolted to the top wall 12 in order that the parts may be readily disassembled or assembled. There is also provided a projecting ledge or rabbet 25 at the front in order that the projecting portions 26 of the blocks 23 may rest thereon when in closed position, the blocks being preferably of triangular outline in side elevation and having the portions 26 extending forwardly and reduced in thickness so as to conform to the thickness of the wall 12.

The top portion 12 is further provided near the rear end of the well 10 with a door opening 27 with which a hinged door 28 co-operates in order to close the same or for the purpose of permitting access to the interior of the well and to the operating lever to be more fully hereinafter described. It may also be apparent that the top of the well may be formed in sections, a plurality of

the plates 12 being used for this purpose. Mounted upon the bottom of the transverse well portions 20 are spaced bearings 29, the same having journaled therein a transverse shaft 30 to which are pivoted and clamped for simultaneous movement in a vertical plane the connecting rods or arms 31, the lower ends thereof being split as indicated at 32 and having aligned threaded apertures 33 for receiving clamping bolts 34 in order that the opposed jaws may be clamped on the shaft 30. The upper ends of the arms 31 are bifurcated as indicated at 35 and have connected thereto, links 36 which are in turn connected to the blocks 23 at the lower corners of the bases thereof as indicated at 37, the blocks being provided with spaced apertured ears or lugs 38 receiving the links 36 therebetween.

Connected to the pivot 38 of the arm 31 and the link 36 in alignment with the well or casing 10, is a rod or link 39, the same having a bifurcated portion 40 pivotally connected to a rod or link 41 which in turn is connected to the bifurcated end 42 of the rod or link 43 pivotally. Mounted upon the bottom portion 11 of the well or casing, which latter is preferably of concrete suitably reinforced if desired, or other suitable material, beneath the door 28, is a bearing 44 in which is pivotally mounted as at 45, a lever 46, the same being bifurcated as shown at 47 and having the furcations thereof engaged with the pivot 44. The lever is provided with an offset handle gripping or foot engaging portion 48 and the legs thereof are perforated with opposed registering perforations as indicated at 49 disposed in equi-distant spaced aligned series and adapted for adjustable connection with the rod or link 43 through the medium of the removable pivot pin 50, thereby varying the movement imparted to the link connection by swinging the handle from the position shown in Figure 2 of the drawing to the position shown in Figure 3 of the drawings or vice versa. Obviously when the handle is moved to the position shown in Figure 2, the arms 31 will be moved to a vertical position and the blocks 23 will be swung downwardly and forwardly into the well or casing with the top faces thereof flush with the top portion 12 and the projections 26 engaging the shoulders or stops 25. When the lever is swung to the position shown in Figure 3 the arms 31 will engage the inclined wall portion 17 heretofore described and below the line of the dead center connecting the pivots 30 and 37, the bottom portion thereby sustaining the weight on the blocks 23.

In use, the blocks are swung upwardly to the position shown in Figure 3 by correspondingly moving the lever 46 as shown in said figure so that the wheels 51 constitut-

ing the landing device of the aeroplane 52 will engage the vertical faces of the blocks constituting a part of the take-off stand. In this position the aeroplane will be held from movement while operating the motor and propeller for ascending or prior to ascending. The operator may then swing the lever 46 from the position shown in Figure 3 to the rearward position shown in Figure 2, thus lowering the blocks into the openings 22 flush with the top portion 12 of the well or casing, in order to free the wheels and permit starting. By this means, a safety appliance is provided which will efficiently serve to hold the aeroplane checked or back until the blocks are released, thereby facilitating testing on the ground and permitting the proper speed of the motor and propellers to be obtained prior to the release of the aeroplane. This will also obviate the necessity of the mechanics putting blocks or other checking devices under the wheels of an aeroplane with the propeller running and subject to constant danger due to this practice. The device may be conveniently operated or manipulated in the manner of a switch while standing at the tail end of the machine free from possible injury.

In view of the foregoing, it is thought that the operation of the device will be readily understood and in view of the simplicity and practical value that it will readily commend itself to those skilled in the art.

Having thus described my invention, what I claim is:—

1. An aeroplane block or take-off stand comprising a substantially H-shaped well, obstructions movable into and out of the well at the parallel sections of the H-shaped well and connected for simultaneous movement, and means in the elongated portion of the well for manipulating said blocks from the rear end thereof.

2. A take-off stand of the class described comprising an imbedded well or casing, said well comprising an elongated closure having a top portion, said top portion having a door opening at one end, a lateral portion projecting from the casing near its opposite end and having a forwardly extending portion parallel to the casing, openings being provided in the casing near the forward end and in the portion parallel thereto, blocks pivoted adjacent the openings and movable into vertical or horizontal planes, means for supporting the blocks in horizontal positions with the top portions thereof flush with the top of the casing, and means within the casing for simultaneously actuating said blocks.

3. A take-off stand of the class described comprising an imbedded well or casing, said well comprising an elongated closure having a top portion, said top portion having a door opening at one end, a lateral portion projecting from the casing near its opposite end

and having a forwardly extending portion parallel to the casing, openings provided in the casing near the forward end and in the portion parallel thereto, blocks pivoted adjacent the openings and movable into vertical or horizontal planes, means for supporting the blocks in horizontal positions with the top portions thereof flush with the top of the casing, means within the casing for simultaneously actuating said blocks, comprising bearings mounted in the bottom portion of the casing and connected, arms pivoted in said bearings, links connecting the arms to the blocks, bearings mounted in the opposite end of the casing, a lever pivoted in said last-named bearing, links connecting the arms aligned with the lever to the lever and adapted to be actuated upon throwing of the lever to either side of the pivot, whereby to raise or lower the blocks.

4. A take-off stand of the class described comprising an imbedded well or casing, said well comprising an elongated closure having a top portion, said top portion having a door opening at one end, a lateral portion projecting from the casing near its opposite end and having a forwardly extending portion parallel to the casing, openings being provided in the casing near the forward end and in the portion parallel thereto, blocks pivoted adjacent the openings and movable into vertical or horizontal planes, means for supporting the blocks in horizontal positions with the top portions thereof flush with the top of the casing, means within the casing for simultaneously actuating said blocks, comprising bearings mounted in the bottom portion of the casing and connected, arms pivoted in said bearings, links connecting the arms to the blocks, bearings mounted in the opposite end of the casing, a lever pivoted in said last-named bearing, links connecting the arms aligned with the lever to the lever and adapted to be actuated upon throwing of the lever to either side of the pivot, whereby to raise or lower the blocks, said lever having the bifurcated portion formed with perforations for the adjustable connection of the links therewith.

5. An aeroplane block or take-off stand comprising an imbedded well of H-shaped formation having at the spaced ends thereof openings through the top of the well, the forward portions of the openings being provided with upwardly facing shoulders forming stops, blocks pivoted below the top of the casing and having reduced portions adapted to engage said shoulders for supporting the blocks with the tops thereof in

horizontal position aligned with the top of the well, the transverse portion of the well having spaced bearings at the bottom, a shaft pivoted in said bearings, arms fixed to the shaft to move therewith, links connecting the free ends of the arm to the blocks at the lower and rear corners thereof, bearings mounted upon the opposite end of the casing, a lever pivoted in said bearing, pivoted links connecting the arm of the casing aligned with the lever to the lever, said connection permitting adjustment of the links along the lever beyond the pivot point thereof, the casing above the lever being provided with an opening and a door closure for said opening.

6. An aeroplane block or take-off stand comprising an imbedded well of H-shaped formation having at the spaced ends thereof openings through the top of the well, the forward portions of the openings being provided with upwardly facing shoulders forming stops, blocks pivoted below the top of the casing, arms pivotally connected to the blocks, a lever having pivotal connection with the arms, said lever having an offset gripping portion adapted to engage the bottom of the well for supporting the lever in a rearward position, said portion of the well being disposed at a higher level than the depressed portion in which the arms are pivoted so as to dispose the links connected directly to the arms in angular relation depressed from a horizontal plane and with the blocks disposed within the well, movement of the lever forwardly serving to shift the pivotal connection of the links therewith whereby to swing the arms forwardly in engagement with inclined front portions at the bottom of the well whereby to swing said blocks upwardly at their free extremities to project above the top of the well, the normal top surfaces of the blocks being disposed in vertical position for engagement with the wheels of the landing frame of an aeroplane, and means for obtaining access to the lever through the top of the well and for closing the same, said blocks when lowered into the well serving to release said wheels.

7. An aeroplane block or take-off stand comprising a support, blocks pivotally mounted below the support at one end thereof and connected for simultaneous movement, and means at the opposite ends of the support adapted to manipulate the blocks for projecting said blocks above the support.

JOHN W. BEASLEY, JR.