

A Duplicate Control System

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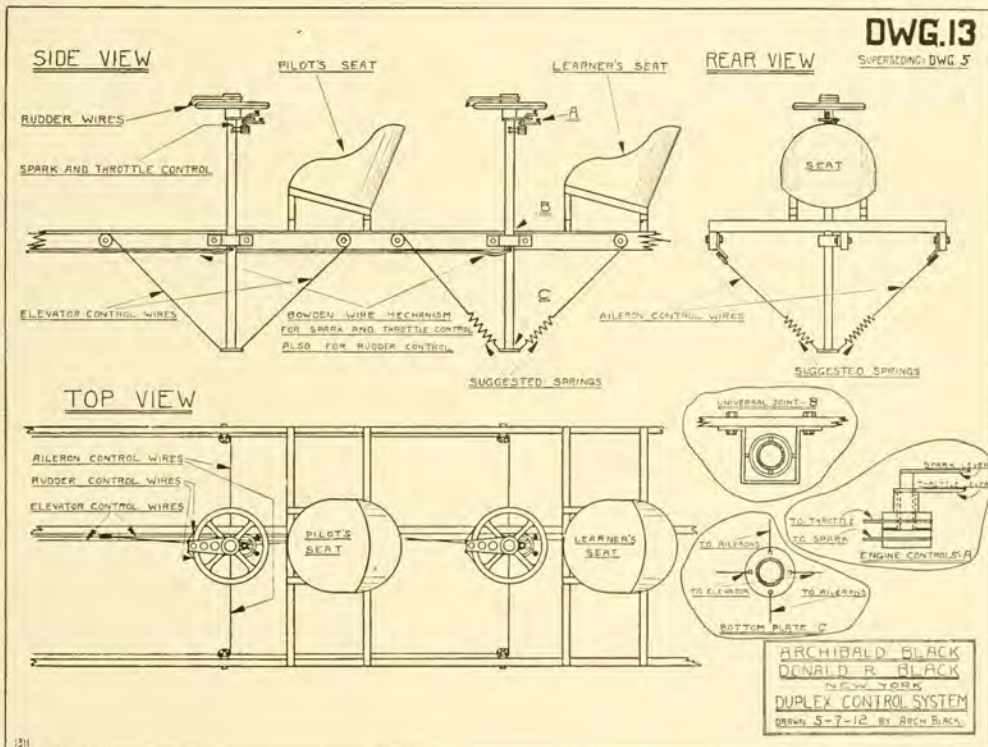


THE accompanying drawing gives a general idea of a control system devised by me, which the brother and myself had proposed to use in a machine of original design which we hope to be able to construct, and for which we are doing some experimental work at present.

We do not expect to apply for patent on this detail and any who consider it of use are at liberty to make what use they wish of it.

motion without interfering with elevators.

The rudder wires are carried by means of Bowden tube mechanism into the inside of upright through a hole near the universal bearing, up inside and out through an arm on top above hand wheel, to rim of wheel, to which they are attached in such manner that they may be wound off one side and on the other by turning wheel in either direction, thus operating rudder. A somewhat similar method is employed with the spark and throttle controls, the wires being brought out of upright through two holes placed below wheel, and being wound



Each control comprises an upright tube mounted near its center by a universal bearing "B" allowing for free movement in all directions in a horizontal plane and is provided with a hand wheel mounted to revolve freely on its upper end.

Aileron wires are connected to bottom plate "C" as shown in drawing, so that rocking upright from side to side operates ailerons. Elevator wires are connected to same plate but at right angles to aileron wires so that pushing or pulling the upright from or to the operator will move elevators without interfering with ailerons or vice versa, ailerons may be operated by side to side

around two drums which are rotated by means of two separate levers.

The springs shown on elevator and aileron wires of student's control are a suggestion which might be tried in order to demonstrate whether the idea is feasible or otherwise. These would of necessity be sufficiently stiff to give the student full control of machine through his wheel, but of such tension that in event of his making a false move (which would be observed immediately by the instructor, both wheels being coupled together, and moving in conjunction) the instructor, by applying more than usual force could operate his control

and overcoming the springs on student's control thus rectify the error.

The chief advantage of this control system is that as will be noted all controls are centered in practically one member, an upright surmounted by a hand wheel thus leaving free the shoulders and what is more important both feet of the operator.