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STEERING COLUMN ARRANGEMENTS FOR AIRPLANES

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Fig.1

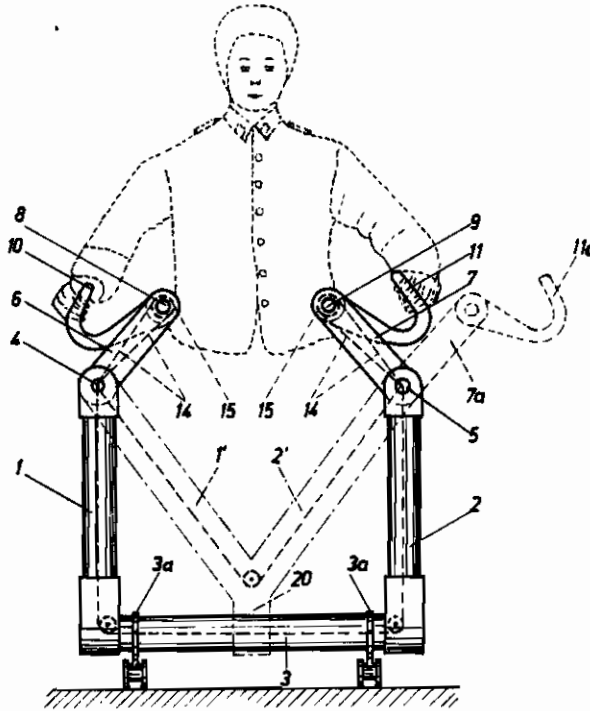
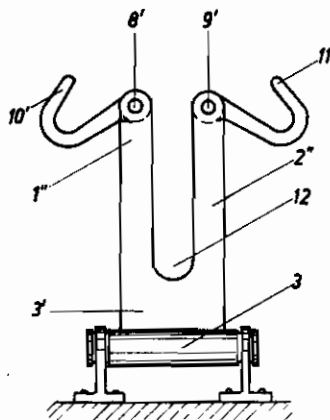


Fig.2



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STEERING COLUMN ARRANGEMENTS FOR AIRPLANES

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This invention relates to improvements in steering column arrangements for airplanes. It is customary at the present time to provide a steering column which projects upwardly in front of a pilot's seat and has a control member, consisting of a handwheel or other suitable handle, either mounted directly adjacent the upper extremity of the column, or else an arm pivoted thereadjacent and adapted to project laterally from the column so that the control member mounted towards the outer end of the arm may be readily turned over to a co-pilot seated to one side of the pilot. In either case however the column interferes with the pilot's range of vision in the direction of flight, and while this is sometimes detrimental for a commercial pilot it is a far greater drawback for a pursuit pilot who has to watch sighting devices and at the same time steer a desired course.

It is an object of the invention to provide a steering column arrangement which enables a pilot to obtain an unobstructed range of vision in a forward direction and still permits the use of control members mounted directly adjacent the columns, or on intermediately positioned arms supported for pivotal movement so that the control members carried thereby may be readily turned over to a co-pilot seated to one side or the other of the pilot. Thus we aim to provide a steering column arrangement which permits such uninterrupted range of vision that a pilot may comfortably operate sighting devices and the like while steering a desired course.

Another object of the invention is to provide a steering column arrangement including two laterally spaced columns separated at least towards their upper extremities and connected for rotation about a common axis, so that ample space is provided to afford the pilot a broad range of vision between the said columns. The invention contemplates the use either of two columns separated throughout their entire height or having their upper portions only separated. In the latter case the separated columns may be integral either with a common member the upper portion of which is centrally and vertically slotted, or with a common member whereon the separated columns consist of two upwardly projecting branches disposed in the form of the upper part of a Y.

We will now proceed to describe these three preferred forms of the invention with the aid of the accompanying drawing, in which:

Figure 1 illustrates a front elevation of one form of our steering column arrangement where-

in both columns are separated throughout their entire height, and on this view we have also indicated a modified arrangement wherein the columns are substantially in the form of branches of a Y.

Figure 2 shows another modification wherein the two columns extend upwardly from a common member which is vertically and centrally slotted from the top.

Referring first to Figure 1, 3 is a hollow shaft suitably supported for rotation as in bearings 3a. Fixed upon the shaft 3 are two spaced, parallel columns 1 and 2 which may also be tubular. Mounted on pivot members 4 and 5 carried by the upper extremities of the columns 1 and 2 are arms 6 and 7 respectively, the latter being also usually hollow. Mounted on other pivot members 8 and 9 on the outer extremities of these arms 6 and 7 are control members or handles 10 and 11 respectively. Suitable connecting means, such as chains 14 passing around rollers 15, extend through the arms 6 and 7, the column 1 and 2 and the shaft 3 to connect the control members 10 and 11 so that movement of one member imparts a corresponding rotary movement to the other. Any suitable conventional means (not shown) may be used to impart movement to the part, or parts, to be moved by rotation of the members 10 and 11. It will thus be seen that rotation of either control member 10 or 11 moves the other member correspondingly, and that either arm 6 or 7 may be independently swung about its pivot member 4 or 5, as for instance the arm 7 may be swung to the position indicated at 7a to bring the control member to its position 11a so that it may be readily handled by a co-pilot seated to the left of the pilot.

If desired, any desired means (not shown) may be provided for locking the arms 6 and 7 against pivotal movement relative to their respective columns 1 and 2, and also for locking the control members 10 and 11 against pivotal movement relative to their respective arms 6 and 7.

In the other modified embodiment indicated in the same view, Figure 1, the column member consists of a lower portion 20 fixed upon the rotary shaft 3 and terminates at its upper extremity in outwardly inclined columns 1' and 2' disposed in the form of a Y. In this arrangement obviously the chain 14 passes directly from the column 1' to the column 2'.

Figure 2 shows a further modification which is primarily adapted for use in cases where it is not necessary to provide arms to permit the lateral swinging of the control members. In this case the

column member 3' fixed upon the shaft 3 is centrally and vertically slotted from the top to form two separated columns 1'' and 2'' between which a gap 12 is thus provided to afford the range of vision desired. In this case the control members 10' and 11' are directly pivoted adjacent the tops of the columns 1'' and 2'' by pivot members 8' and 9' respectively.

It will thus be noted that in all embodiments

provision has been made for an ample range of vision between the two steering columns and the pilot is permitted a clear and unobstructed view ahead both to facilitate navigation and also to permit the operation of sighting mechanisms with greater ease and accuracy.

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