Oct. 21, 1952 W. A. ENGEL 2,614,781

AIRCRAFT SEAT LEG RELEASE MEANS

Filed June 16, 1949 2 SHEETS—SHEET 1

FIG-1-

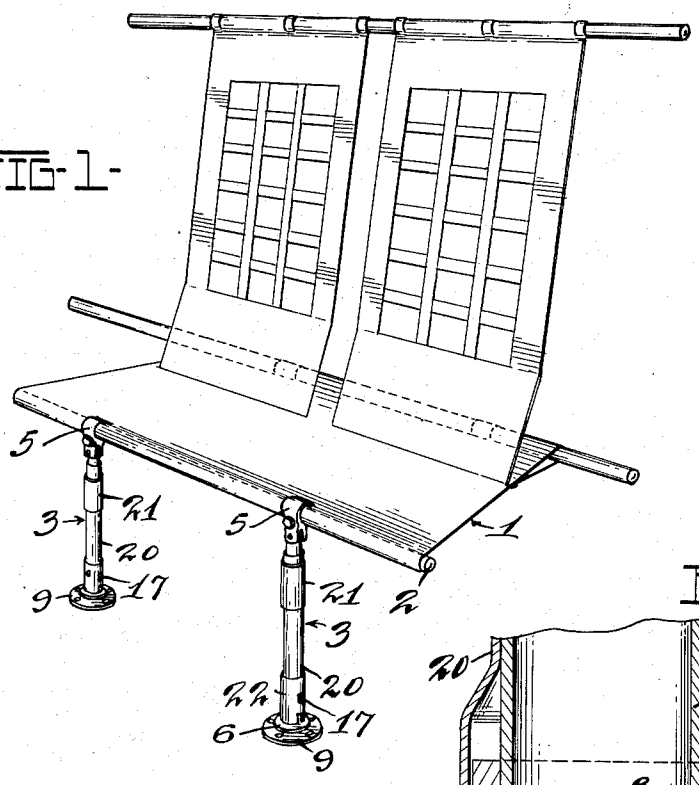



FIG-3-

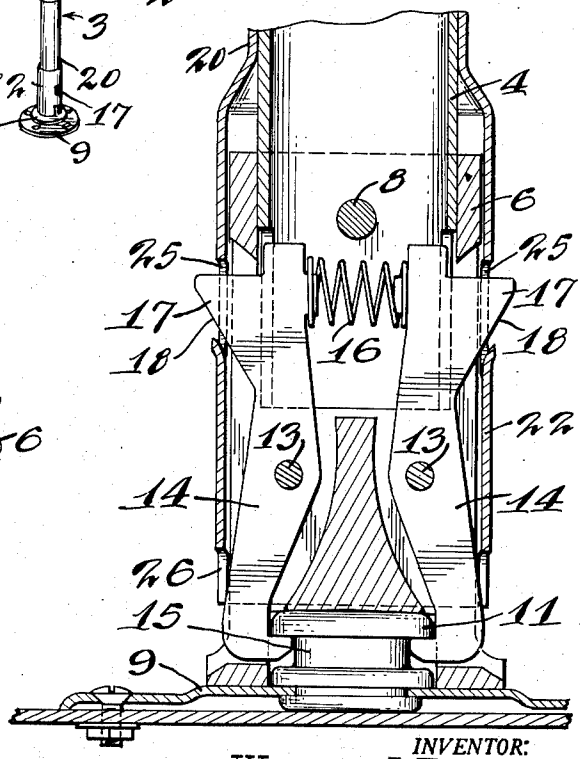
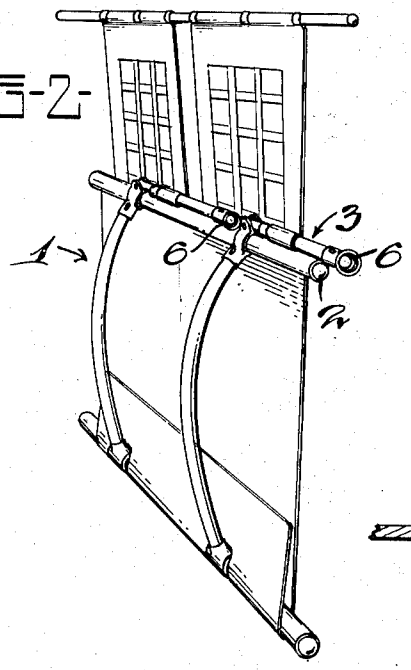



FIG-2-




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AIRCRAFT SEAT LEG RELEASE MEANS

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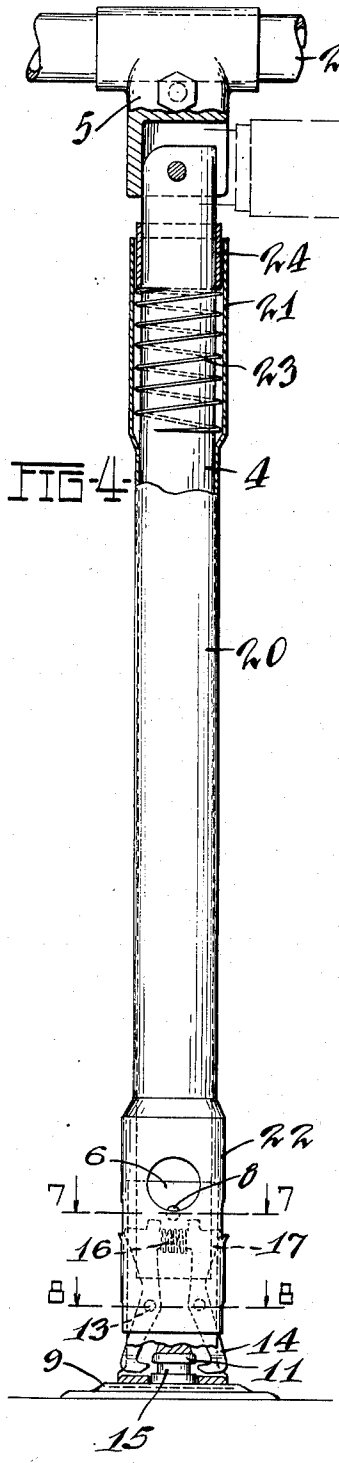



FIG-4-

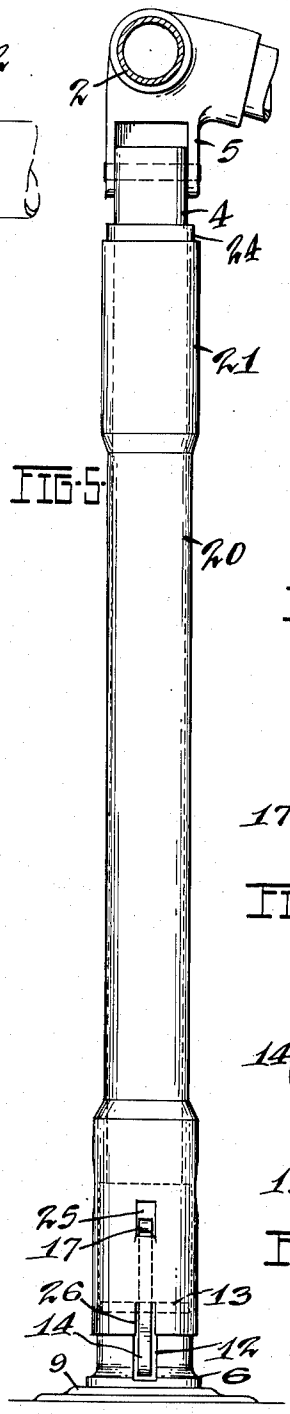



FIG-5-

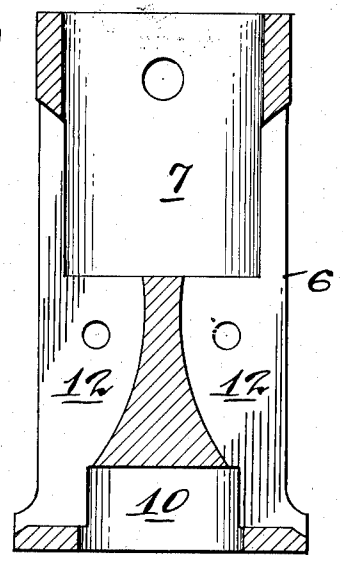



FIG-6-

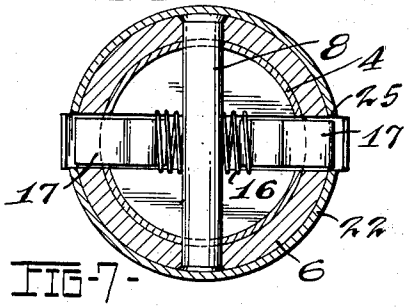



FIG-7-

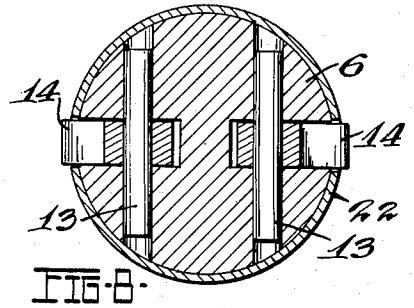



FIG-8-

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# UNITED STATES PATENT OFFICE

2,614,781

## AIRCRAFT SEAT LEG RELEASE MEANS

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Application June 16, 1949, Serial No. 99,505

1 Claim. (Cl. 248—189)

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This invention relates particularly to folding-seat legs, and refers especially to easily releasable means for fixedly attaching the legs of such seats to the floor structure when the seats are in set-up usable position.

The object of the invention is the provision of a leg of the character described which is adapted to have releasable engagement with a fixed floor member, and is easily and quickly operable from a point adjacent to the supported seat by a person sitting thereon to effect release of the floor connection and permit a folding of the seat.

Further objects and advantages of the invention will be apparent from the following detailed description, and from the accompanying drawings illustrating one embodiment of the invention, in which—

Fig. 1 is a perspective elevation in usable set-up position of a folding-seat of a type commonly used in aircraft and equipped with legs embodying the invention; Fig. 2 is a similar view of the seat and its legs in folded position; Fig. 3 is an enlarged longitudinal section of a leg embodying the invention in engagement with its floor lock; Fig. 4 is a side elevation of the leg and its locking means, with parts broken away and with the locking parts moved to releasing position; Fig. 5 is a different side elevation of the leg as shown in Fig. 4; Fig. 6 is an enlarged central longitudinal section of the foot member of the leg that carries the releasable catch members, and Figs. 7 and 8 are cross-sections on the lines 7—7 and 8—8, respectively, in Fig. 4.

In Figs. 1 and 2, 1 designates a folding-seat such as used in aircraft and which, in the present instance, has a front frame bar 2 supported in usable position by legs 3. These legs are hinged at their inner ends to the bar 2 to be folded lengthwise thereagainst, as shown in Fig. 4.

Each leg 3, in which the invention resides, comprises a standard 4 preferably of tubular form that is pivotally connected at its upper end to a hinge member 5 mounted on the bar 2 to permit folding against the bar. A foot-piece 6 is attached to the lower end of the standard 4 preferably by inserting the lower end of the standard into a socket 7 in the top of the foot-piece and connecting them by a pin 8. The lower end of the foot-piece is adapted to seat on a floor plate 9 secured to the adjacent floor structure and is provided with a central recess 10 for fitting over a lock button 11 that is fixed to and projects above the floor plate.

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The foot-piece 6 has a pair of opposing longitudinally extending side slots 12 which open at their lower ends sidewise into the recess 10, and in each of which is pivoted at 13 a catch finger 14 of lever form. The lower end of each catch finger is provided with an inwardly directed hook which enters the respective side of the recess 10 and is adapted to engage in the side recess 15 of the lock button 11 to retain the leg standard in locked engagement with the foot plate 9. The upper ends of the catch fingers 14 extend above the pivots 13 and enter the respective side portions of the socket 7 and registering slots in the standard tube 4 and are connected in said recess by a coiled expansion spring 16. This spring acts to yieldingly urge the upper ends of the catch fingers outward so as to force their lower ends into catch engagement with the lock button 11. Each catch finger has a spur 17 at its upper end projecting outwardly therefrom beyond the side of the foot-piece 6 and forming a downwardly facing cam surface 18 at its outer side for the purpose hereinafter described.

Fitted around the leg standard 4 for longitudinal sliding movements thereon is a trip sleeve 20 having an enlargement 21 at its upper end and an enlargement 22 at its lower end. A coiled expansion spring 23 is disposed in the space between the standard 4 and sleeve enlargement 21, and has one end-thrust against the lower end of said enlargement and its other end-thrust against a sleeve or shoulder part 24 fixed to the upper end portion of the standard within said enlargement (Fig. 4).

The lower sleeve enlargement 22 slidingly fits down around the foot-piece 6 and has opposing side slots 25 therein into which the respective catch finger spurs 17 project. The lower end walls of these slots are adapted to engage the cam surfaces 18 of the finger spurs and to coact therewith to force the upper ends of the catch fingers inward when the sleeve 20 is moved upward on the leg standard. This movement of the fingers effect a release of their hooked ends from an engaged catch button 11. When the trip sleeve is moved downward on the standard from a rest position, its lower end may act on the outer sides of the catch end portions of the fingers to force them into catch engagement with the lock button when the foot-piece 6 of the leg standard is resting on the floor plate, thus serving to augment the action of the spring 16. In the present instance, the lower end of the sleeve enlargement 22 is slotted, as at 26, to

receive the lower end portions of the catch fingers.

In aircraft service, it is desirable to employ seats that are firmly locked to the floor when in use and which may be folded against the wall of the aircraft when not in use. It is also desirable to provide floor locking means in connection with the legs, which means can be easily and quickly unlocked by a person sitting on the seat and before rising therefrom. This is accomplished with the present leg construction by the person merely reaching over to enable him to grasp the trip sleeve 20 of a leg and then to move the sleeve upwardly on the leg standard 4 against the tension of the spring 23, and thus effect a release of the catch fingers 14 from locking engagement with the floor or lock button 11. This release of the catch fingers is effected by reason of the lower end walls of the sleeve slots 25 engaging the tapered or cam edges 18 of the finger spurs 17 and forcing the upper ends of the fingers inward against the tension of the spring 16. When the catch fingers of a leg have been released from the lock button, the leg may be raised to disengage the lock button from the recess 10 in the lower end of the foot-piece 6 and the leg then folded against the front seat bar 2. When setting up a seat in unfolded position, a leg may be easily and quickly engaged with a lock button by forcing the foot-rest recess 10 down over the button while the catch sleeve 20 is held retracted, thus holding the catch fingers in released position.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

In combination, a leg standard, a floor-lock member adapted to have interengagement with the lower end of the leg when the latter is in usable position, catch means normally operable to have releasable catch engagement with the floor member when the standard and floor member are in predetermined interengaged relation, said catch means comprising a plurality of catch levers disposed longitudinally of the leg standard and pivoted thereto for rocking movement to release and engage the floor-lock member when in register therewith, spring means acting on the inner ends of said catch levers to normally force them outwardly, each catch lever having an outwardly disposed cam projection on its inner end portion above its fulcrum with the cam surface of the projection facing outwardly, a sleeve mounted on the leg standard for movement lengthwise thereof and having openings for receiving the cam projections of the levers whereby an upward movement of the sleeve on the leg standard will cause the outer end walls of said openings to coact with said cam surfaces to effect a positive release of the catch levers from holding engagement with the floor-lock member, said sleeve extending to near the upper end of the leg standard, and means acting against the sleeve and leg standard to normally hold the sleeve in its downwardly extended position.



WILLIAM A. ENGEL.

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