

Sept. 24, 1940.

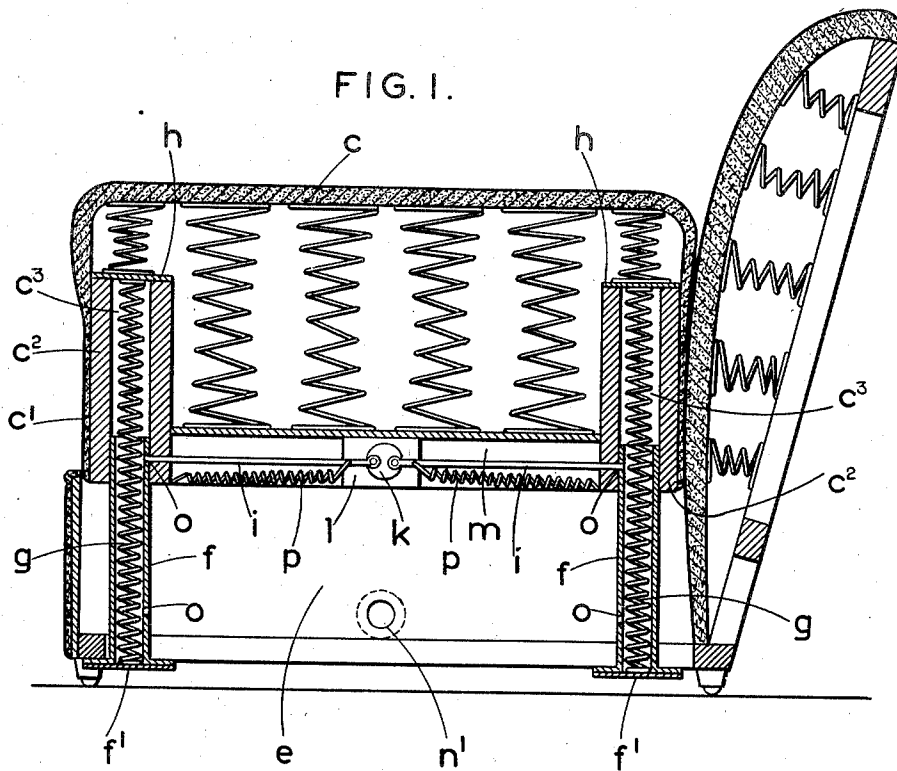
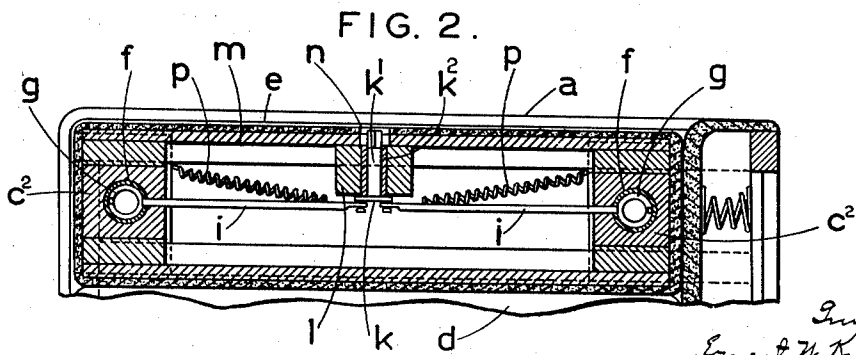
E. W. KNIGHT ET AL

2,215,758

CONVERTIBLE SEAT

Filed Aug. 26, 1939

3 Sheets-Sheet 1



Inventors:
Ernest W. Knight
Stanley E. Pratt
by Richard E. Babcock atty.

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3 Sheets-Sheet 2

FIG. 3.

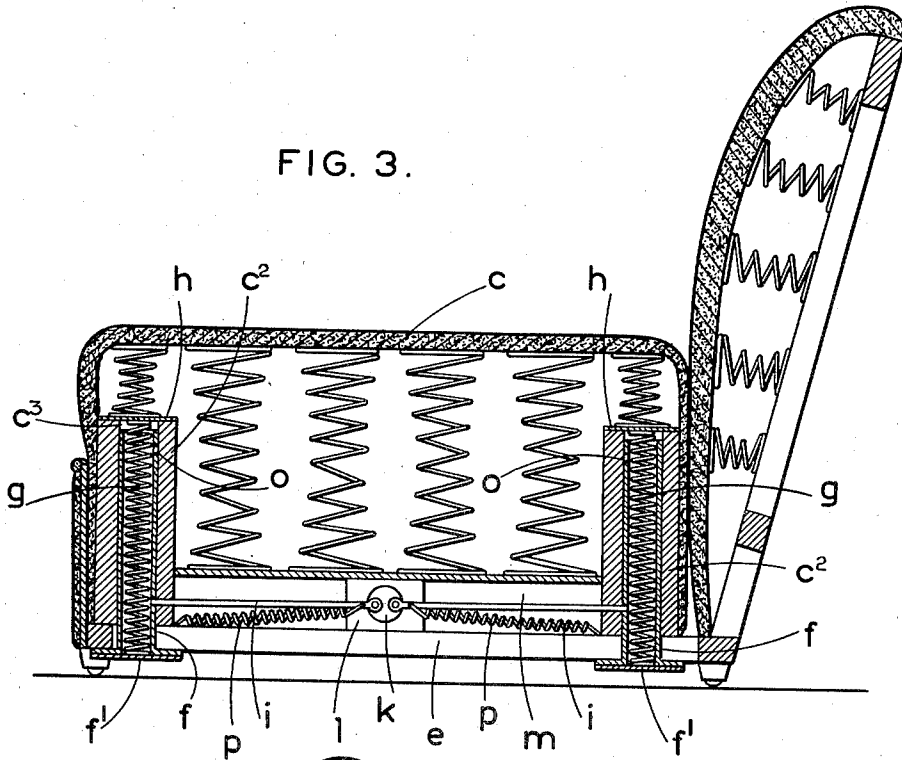
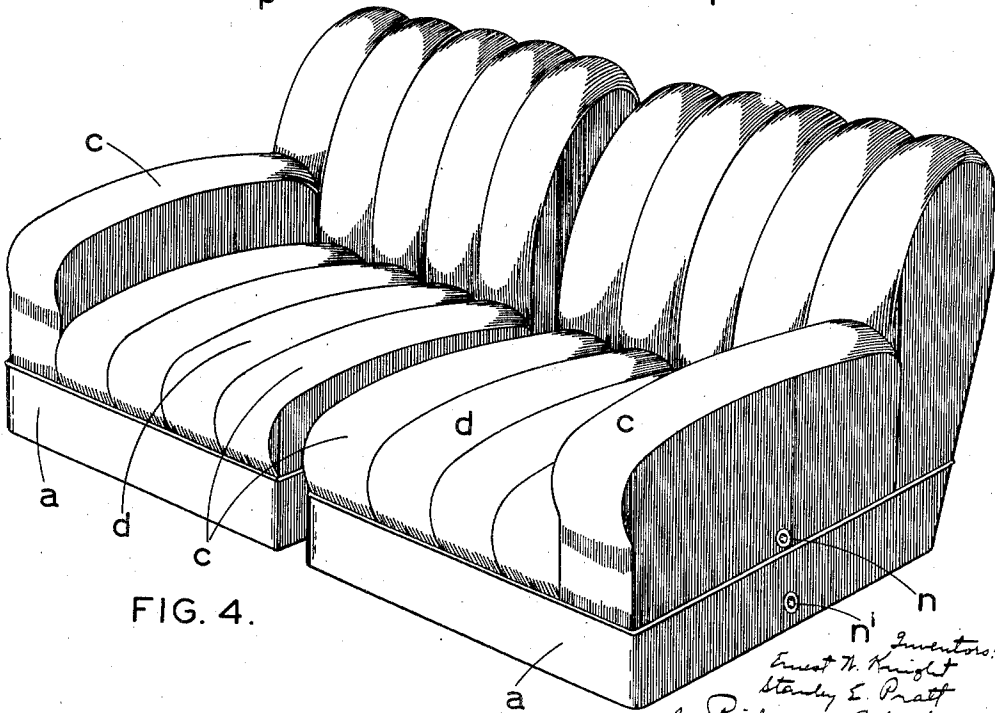


FIG. 4.

Inventors:
Ernest W. Knight
Stanley E. Pratt
by Richard E. Babcock atty.

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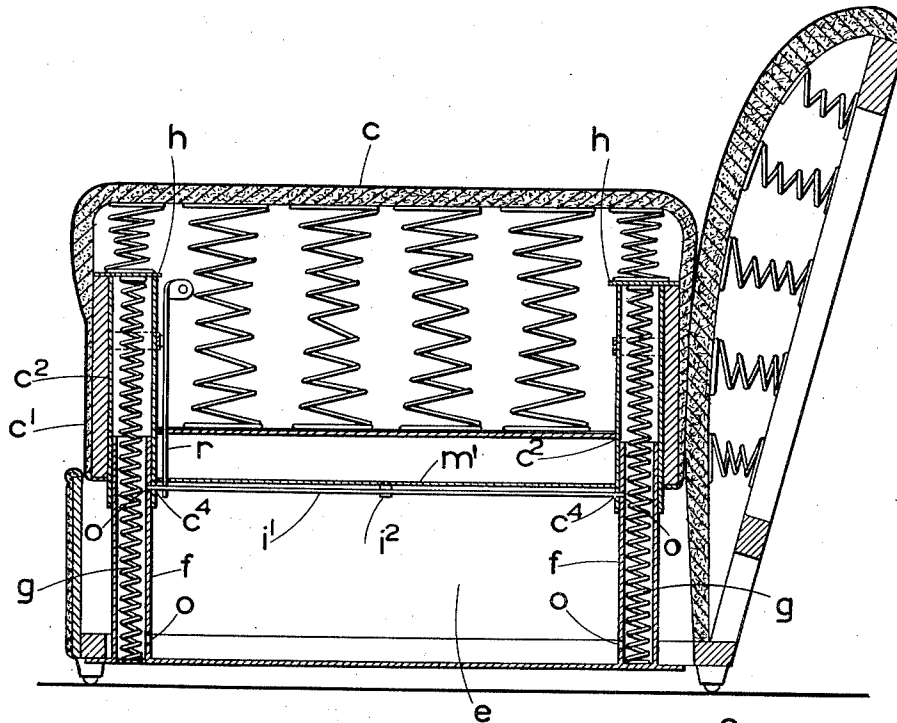


FIG. 5.

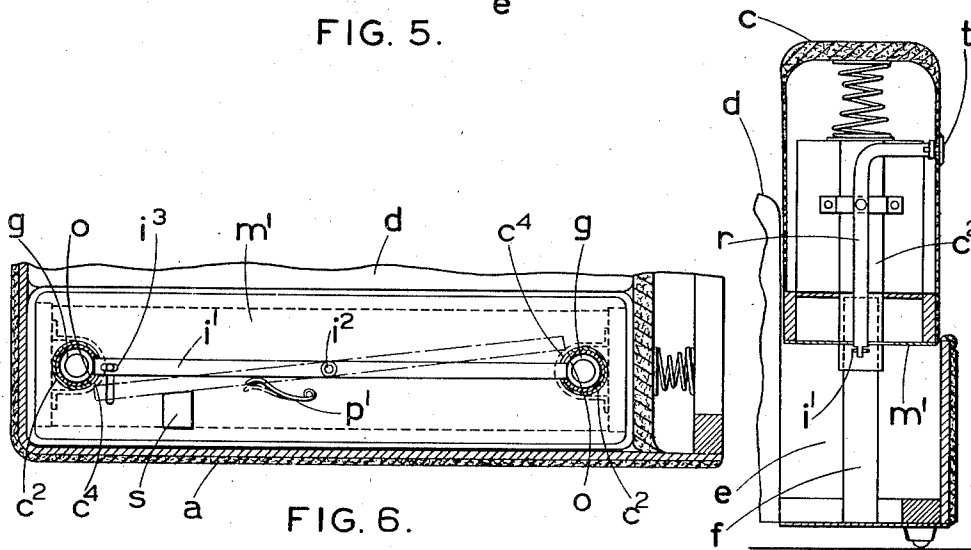


FIG. 6.

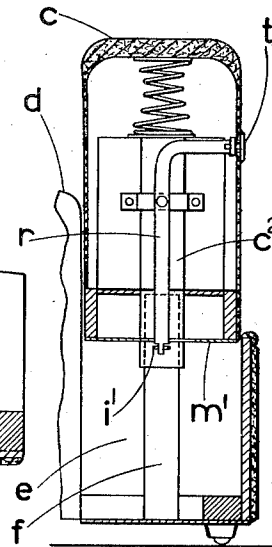


FIG. 7.

Inventors:
Ernest W. Knight
Stanley E. Pratt
by Richard E. Babcock, att.

UNITED STATES PATENT OFFICE

2,215,758

CONVERTIBLE SEAT

Ernest William Knight and Stanley Ernest Pratt,
Coventry, EnglandApplication August 26, 1939, Serial No. 292,176
In Great Britain June 16, 1936

1 Claim. (Cl. 155—198)

This invention relates to seats of the armchair type including vehicle seats having arm rests and has for its object to extend the usefulness of such seats by using the arm rests for the purpose of increasing the seating capacity thereof.

According to the invention one or both of the arm rests of a seat of the type referred to is or are adapted for downward displacement relatively to the seat proper to a position in which the upper surface or surfaces of said arm or arms is or are flush with said seat and form one or more lateral continuations thereof.

By means of the invention it is possible by a combination of two or more such seats placed in juxtaposition to provide a continuous seat of any desired length with or without an arm rest at one or both ends.

In case of vehicle seats it is also possible to increase the seating capacity and to dispose of the arm rests in such a manner as to avoid the necessity for an open recess to receive the arm rest when not in use.

For the purposes of the invention the arm rests are arranged to be moved parallel to one another in vertical planes against the action of springs normally tending to maintain them in the raised position and means are provided for locking them in either of their extreme positions.

In the accompanying drawings,
Figure 1 is a vertical sectional view illustrating the manner in which the arm or arms of the improved seat are mounted according to the present invention.

Figure 2 is a transverse sectional view thereof.

Figure 3 is a view similar to Figure 1 but showing the arm of the seat in the lowered position.

Figure 4 illustrates the manner in which a pair of the improved seats can be used to form a settee.

Figure 5 is a view similar to Figure 1 showing an alternative form of locking and releasing means for the arms.

Figure 6 is a transverse sectional view of the seat shown in Figure 5.

Figure 7 is a vertical sectional view of the seat shown in Figure 5.

Referring to the construction shown in the drawings, the sides *a, a* of the seat below the level thereof are each formed with a cavity *e* open at the top to receive the lower part *c*¹ of the arm *c* of the seat with a free sliding fit. The vertical dimension of the arm is such that when lowered to its full extent into the cavity the upper surface of the arm is level with the surface of the seat *d*. The arms are upholstered and fitted with

springs in the same style and manner as the seat itself so that when in their depressed position they form lateral extensions of the seat. The seat is preferably upholstered with pleats of the same width as the arms so that when the latter are lowered they match with and form an indistinguishable part of the seat proper.

The arms are constructed with front and rear pillars or tubes *c*², *c*² which are a sliding fit in the cavity *e* and are guided in their movements therein by means of a pair of vertical tubes *f, f* fixed to the base of the seat within the said cavity and adapted to engage vertical holes *c*³, *c*³ formed in the said pillars. The tubes are closed at the bottom by means of plates *f*¹, *f*¹.

The weight of each arm is supported by means of compression springs *g, g* housed within the tubes and extending upwards into the vertical holes *c*³, *c*³ in the pillars where they abut at their upper ends against plates *h, h* closing the tops of the said holes. The tendency of the springs is normally to maintain the arms in the raised position but means are provided for locking the arms in either of their extreme positions. For this purpose, according to the example shown in Figures 1, 2, 3 and 4 the lower part *c*¹ of the arm is provided with a pair of locking bars *i, i* pivotally connected with a disc *k*. This disc is fixed to a spindle *k*¹ rotatably mounted in a bearing *k*² carried by a block *l* which is supported by a member *m* fixed between the pillars *c*², *c*². The outer end of the spindle protrudes into a hole *n* in the member *m* and is suitably formed to receive a key. The free ends of the locking bars are adapted to snap into engagement with holes *o, o* formed in the upper and lower ends of the fixed tubes *f, f* under the influence of tension springs *p, p* attached to the bars at one end and to the pillars at the other. The arrangement is such that when the arm of the seat is in the raised position, as shown in Figure 1, it is locked by the bars *i, i* engaging the holes *o* in the upper ends of the fixed tubes. When it is desired to lower the arm to the level of the seat a key is engaged with the spindle *k*¹ and turned to release the locking bars against the action of their springs *p, p*. The arm is then free to be forced down to the level of the seat against the pressure of the supporting springs *g, g* in which position it is automatically locked by the ends of the bars *i, i* snapping into engagement with the holes *o* in the lower ends of the vertical tubes, as shown in Figure 3. Access to the spindle when the arm is depressed is provided for by forming a hole *n*¹ in the side of the seat as seen in Figures 1 and 4.

In the form of locking device shown in Figures 5, 6 and 7 the use of a key is dispensed with and a locking bar i^1 pivoted to the member m' about a vertical axis i^2 at the middle of its length. The ends of said bar protrude into slots c^4 in the tubes c^2 and are adapted to be move out of engagement with slots o, o in the upper and lower ends of the fixed tubes f, f by pressure applied to one arm of a preferably vertical lever r pivoted to tube c^2 the other arm of which engages a slot i^3 in the locking bar i^1 . A spring p^1 fixed to the member m' and bearing against the locking bar normally tends to hold the latter in either of its operative or locking positions. The disengaging movement of the said locking bar is limited by a fixed stop s . The operation of the lever r is effected by means of a press button or finger piece t at the outside of each of the arms. When pressure is applied to the lever in this way the locking bar is moved into the position shown in dotted lines in Figure 6. If the arm is in the raised position shown in Figure 5 it can then be depressed to the level of the seat whereupon the locking bar under the influence of the spring p^1 snaps into engagement with the slots o, o at the lower ends of the tubes f, f and retains the arm in the depressed position. When it is desired to release either arm the lever is again operated by pressure on the finger piece or button to disengage the locking bar which when the arm is fully raised by the springs g, g snaps into engagement with the slots o, o at the upper ends of the tubes f, f and retains the arm in the raised position. It will be understood that the arms can be depressed independently of each other each being provided with a lever r and locking bar i^1 .

As already stated the seats are of the modern flush-sided type so that when one or both of the arms are depressed to the level of the seat they can be placed close together side by side to form a settee or seat of any desired length.

As represented in Figure 4 a space is shown between the chairs to illustrate how they go together but in actual use they would, of course, be placed in close contact with each other to form an unbroken seating surface of a uniform design. It will be obvious that any number of chairs may be placed together in this way to form a continuous seat of any desired length the intermediate chairs having both arms depressed and the end chairs having only the inside arm depressed.

We claim:

A device of the character described comprising, a seat, a back support associated with said seat and projecting laterally beyond the end thereof, and a vertically movable arm rest mounted at the end of said seat in front of the projecting portion of said back support, in combination with operating means for normally automatically resiliently raising and maintaining the upper surface of said arm rest in raised position above the upper surface of said seat, but operable to permit downward movement of said arm rest to a lowered position wherein the upper surface of said arm rest is level with the upper surface of said seat and constitutes a lateral continuation thereof, said means comprising a pair of vertically disposed tubular members disposed in telescoping relationship beneath said arm rest, the remote ends of said respective members being closed, a compression spring disposed within and thrusting vertically against the remote closed ends of said tubular members, said spring being of such strength and proportions as to force and normally maintain said arm rest in its raised position above the surface of said seat, and a locking device associated with said tubular members for maintaining said arm rest in lowered position against the action of said spring when desired.

ERNEST WILLIAM KNIGHT.
STANLEY ERNEST PRATT.