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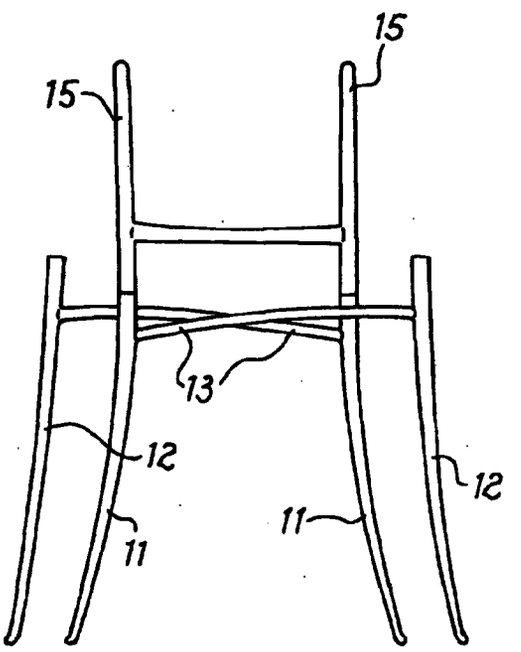
(54) Foldable chair having rear legs rotatable about a coaxial column

(57) Foldable chair consisting of a frame (10) comprising two pairs of uprights (11,12) forming the front and rear legs of the chair, each upright (11) of the associated pair being connected to the other one (12) by an associated cross-piece (13), the seat (3) being hinged, via associated means (20), to the rear uprights (11), in which the said rear uprights (11) are extended upwards by means of respective columns (15) for supporting the backrest (2), characterized in that said rear uprights (11) are connected to the respective column (15) arranged above via associated coaxial means (14) designed to allow rotation of the upright (11) relative to the column (15) so as to obtain folding of the chair.

Fig.3



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Description

The present invention relates to a foldable chair consisting of a frame comprising two pairs of uprights which form the front and rear legs and are connected together by means of a cross-piece, said rear legs being extended upwards by means of respective columns for supporting the backrest, to which they are connected via associated coaxial means designed to allow the rotation of the upright relative to the column so as to obtain folding of the chair.

It is known how in the furnishing sector there is the increasing need to have variable-volume furniture whose dimensions can be reduced both in order to limit the packaging volume, and hence the areas intended for storage, and so as to be able to make use of the available space, which is often very limited, in a varying manner depending on the specific requirements which may arise in each case.

It is also known that many designs have been produced so as to provide foldable chairs which can be reduced to the smallest possible overall dimensions and which, on the other hand, can be opened and arranged in the area of use only at the time when they are actually required.

In particular, foldable chairs are known, in which the component parts, seat, backrest, legs, etc., by rotating about horizontal axes of rotation, cause raising of the front legs and then folding-up thereof against the rear legs, causing an increase in the vertical dimension of the chair when passing from the open configuration to the closed configuration.

The technical problem which is posed, therefore, is that of providing a foldable chair which allows the overall volume thereof to be reduced in a simple and functional manner and is designed to keep substantially unchanged the overall vertical dimension when passing from the open configuration to the closed configuration.

Within the scope of this problem a further requirement is that the chair should be designed with a minimum number of accessory functional parts, which must remain concealed so as not to alter the aesthetic appearance of the chair as a whole.

These technical problems are solved according to the invention by a foldable chair consisting of a frame comprising two pairs of uprights which form the front and rear legs of the chair, each front leg being connected to the corresponding rear leg by an associated cross-piece, the seat being hinged, via associated means, to the rear uprights, the said rear uprights being extended by means of respective columns for supporting the backrest, in which said rear uprights are connected to the respective columns arranged above via associated coaxial means designed to allow rotation of the upright relative to the column so as to obtain folding of the chair.

Further details may be obtained from the following description of a non-limiting example of embodiment of the invention, provided with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of the chair according to the invention;

Figure 2 shows a partially sectioned side view of the chair according to Fig. 1;

Figure 3 shows a view of the frame of the chair in the closed configuration;

Figures 4a-4e show the sequence for folding of the chair according to Fig. 1;

Figure 5 shows a sectional view, along a transverse plane through the uprights, of a first variation of an example of embodiment relating to the frame of the chair; and

Figure 6 shows a partially sectioned view of a further variation of an example of embodiment relating to the frame of the chair.

As illustrated, the chair 1 according to the invention comprises a frame 10 to which a backrest 2 and a seat 3 are connected; whereas the backrest 2 is fixed to the frame, the seat 3 is hinged therewith via hinging means 20 described in detail hereinbelow.

Said frame 10 comprises two uprights 11 forming the rear legs and two uprights 12 forming the front legs of the chair; each front leg 12 is connected to the corresponding rear leg 11 by means of cross-pieces 13 so as to form a single body.

Each rear upright 11 has, coaxially connected to it by means of an associated vertical pin 14, a column 15 to which the backrest 2 is fixed.

As a result of the vertical pin 14, the upright 11 arranged below is therefore able to rotate with respect to the column 15, causing a corresponding rotation of the front leg 12 about a vertical axis formed by the pin 14 itself.

The seat 3 is in turn hinged with the upper column 15 by means of a horizontal-axis hinge 20, one of the arms 20a of which also forms the rear support of the seat 3 itself.

The seat 3 has, in its front part, pins 3a designed to be inserted into corresponding recesses 12a formed in the upper end of the front legs 12, so that, when the chair is open, the seat is firmly fixed to the frame and the latter is prevented from performing any movement.

In the bottom surface 3b of the seat 3, in an approximately central position, there is also formed a cavity 3c, which is elongated in the transverse direction and designed to allow gripping of the seat 3 for raising thereof, as will emerge more clearly in the following description of the sequence for folding the chair according to the invention.

The chair functions in the following manner:

- in the position for normal use, the chair is open (Fig. 2) and fixed thanks to the locking system formed by the pins 3a of the seat 3, which, inserted into the respective recesses 12a of the front legs 12, cause locking of the frame 10;

- when it is required to fold up the chair, the seat 3 is raised by pulling via the cavity 3c which allows firm gripping of the seat itself;

- once the seat 3 has been raised, the assembly formed by the front legs 12, by the cross-piece 13 and by the rear legs 11 may be rotated about the vertical pin 14 of the column 11 coaxial with the rear legs;

- in particular both the legs rotate in an anticlockwise direction, being respectively brought into abutment on the opposite side of the respective opposite rear legs;

- once the legs have been rotated it is possible to rotate the seat 3 downwards so as to bring into a vertical position, thus completing folding-away of the chair.

In order to obtain locking of the chair in the folded-away position it is also envisaged that the vertical pins 14 about which the front legs 11 rotate are provided with friction means which oppose rotation of the legs due to the force of gravity alone.

As illustrated in Fig. 5, it is also envisaged that the two assemblies formed by the front leg 12, cross-piece 13 and rear leg 11 are connected together by a hinged compass device 30, which allows automatic rotation of the second leg to be obtained by acting merely on the first leg.

In the case illustrated in Fig. 6 where the dimension of the depth of the seat is greater than the widthwise dimension thereof, it is also envisaged that the cross-pieces 13 are formed with two arms 113a and 113b which are telescopically joined together so as to allow a reduction in the length of the cross-piece 13 so that, when the chair is folded up, the front legs 11 remain within the widthwise dimensions of the rear legs 11.

Claims

1. Foldable chair consisting of a frame (10) comprising two pairs of uprights (11,12) forming the front and rear legs of the chair, each upright (11) of the associated pair being connected to the other one (12) by an associated cross-piece (13), the seat (3) being hinged, via associated means (20), to the rear uprights (11), in which the said rear uprights (11) are extended upwards by means of respective columns (15) for supporting the backrest (2), characterized in that said rear uprights (11) are connected to the respective column (15) arranged above via associated coaxial means (14) designed to allow rotation of the upright (11) relative to the column (15) about a substantially vertical axis so as to obtain folding of the chair.

2. Foldable chair according to Claim 1, characterized in that said means connecting together the rear upright (11) and the column (15) arranged above consist of coaxial pins (14) inserted in corresponding recesses (12a) of said upright (11) and column (12).

3. Foldable chair according to Claim 1, characterized in that said pins (14) are associated with adjustable friction means so as to prevent free rotation of the upright (11) with respect to the column (15).

4. Foldable chair according to Claim 1, characterized in that said seat (3) is connected to the rear uprights (11) by means of horizontal-axis hinges (20).

5. Foldable chair according to Claim 1, characterized in that said seat (3) has projections (3a) designed to allow joining to corresponding recesses (12a) coaxially formed in the upper end of the front uprights (12) and designed to cause locking of the frame (10) when the chair is open.

6. Foldable chair according to Claim 1, characterized in that the cross-pieces (13) are connected together via hinging means (30) designed to allow automatic rotation of one of the two rear uprights following rotational operation of the other one.

7. Foldable chair according to Claim 1, characterized in that said cross-pieces (13) for connecting the front uprights (12) to the rear uprights (11) have a variable length.

8. Foldable chair according to Claim 7, characterized in that said cross-pieces (13) are formed by means of two elements (113a,113b) telescopically joined together.

9. Foldable chair according to Claim 1, characterized in that in the bottom surface (3b) of said seat (3) there is a recess (3c), elongated in the transverse direction, for gripping and operating the seat itself.

Fig.1

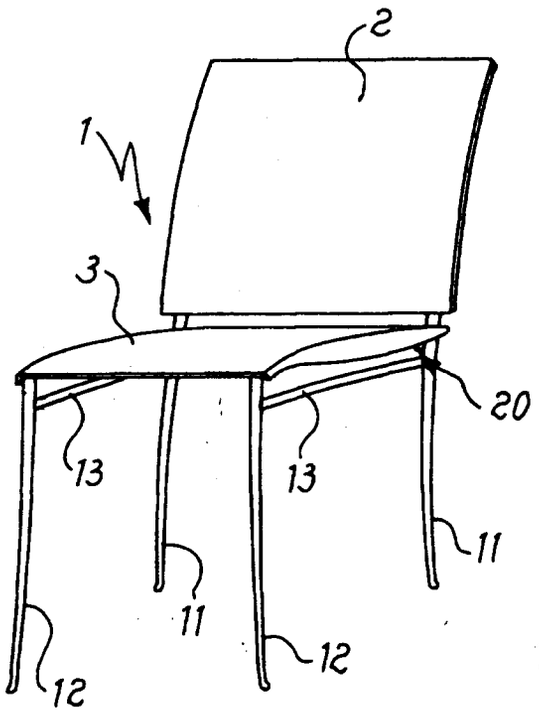


Fig.2

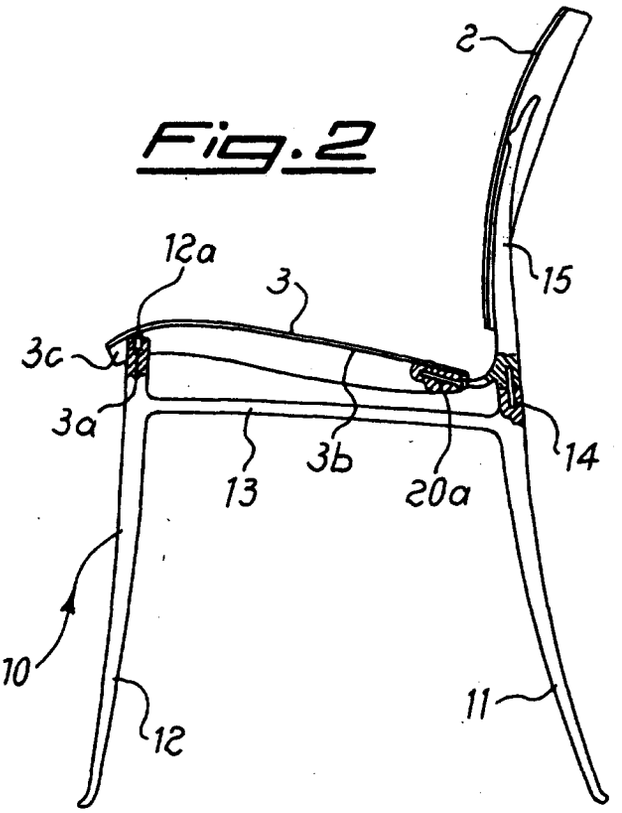


Fig.3

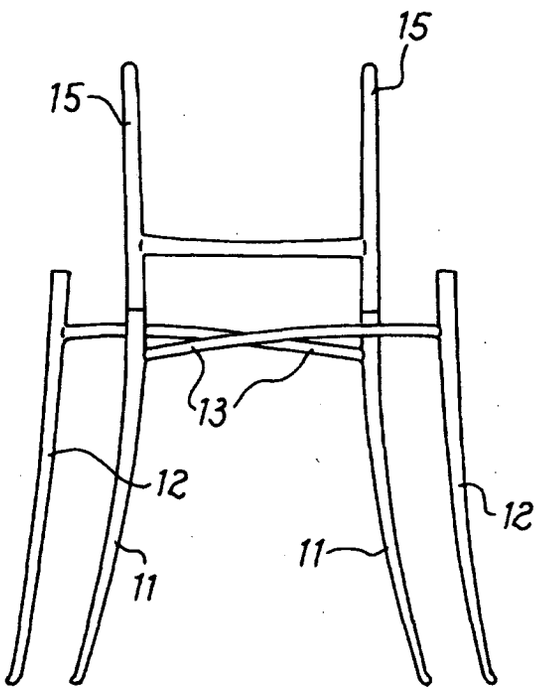
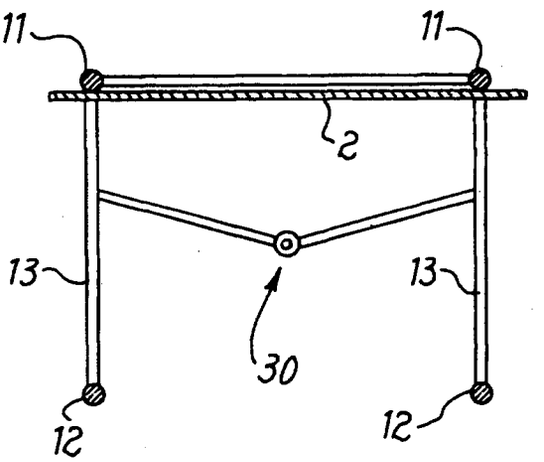
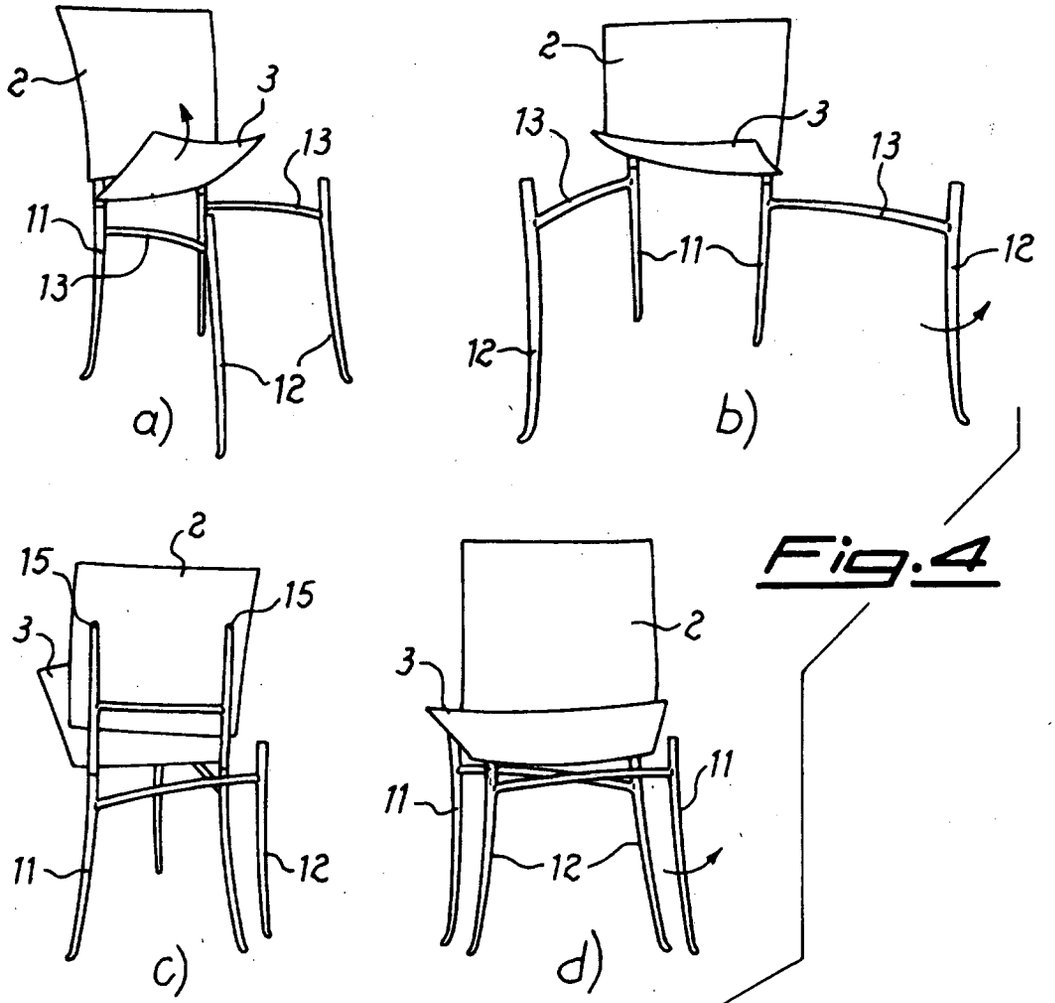


Fig.5




2
3
13
11
13
12
a)
2
13
3
13
11
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b)
15
2
15
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12
c)
2
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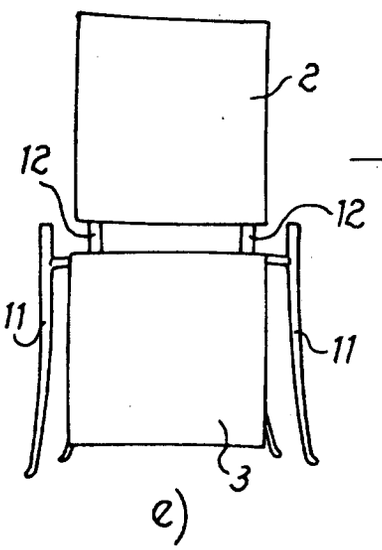
11
11
12
d)

Fig.4


2
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12
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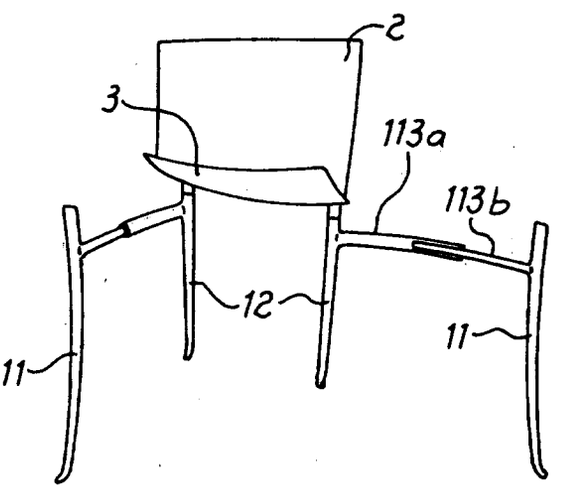
3
e)

Fig.6


2
3
113a
113b
12
11
11