

Jan. 3, 1967

I. GOLDMERSTEIN

3,295,886

COOLING MEANS FOR CHAIRS

Filed Nov. 19, 1964

3 Sheets-Sheet 1

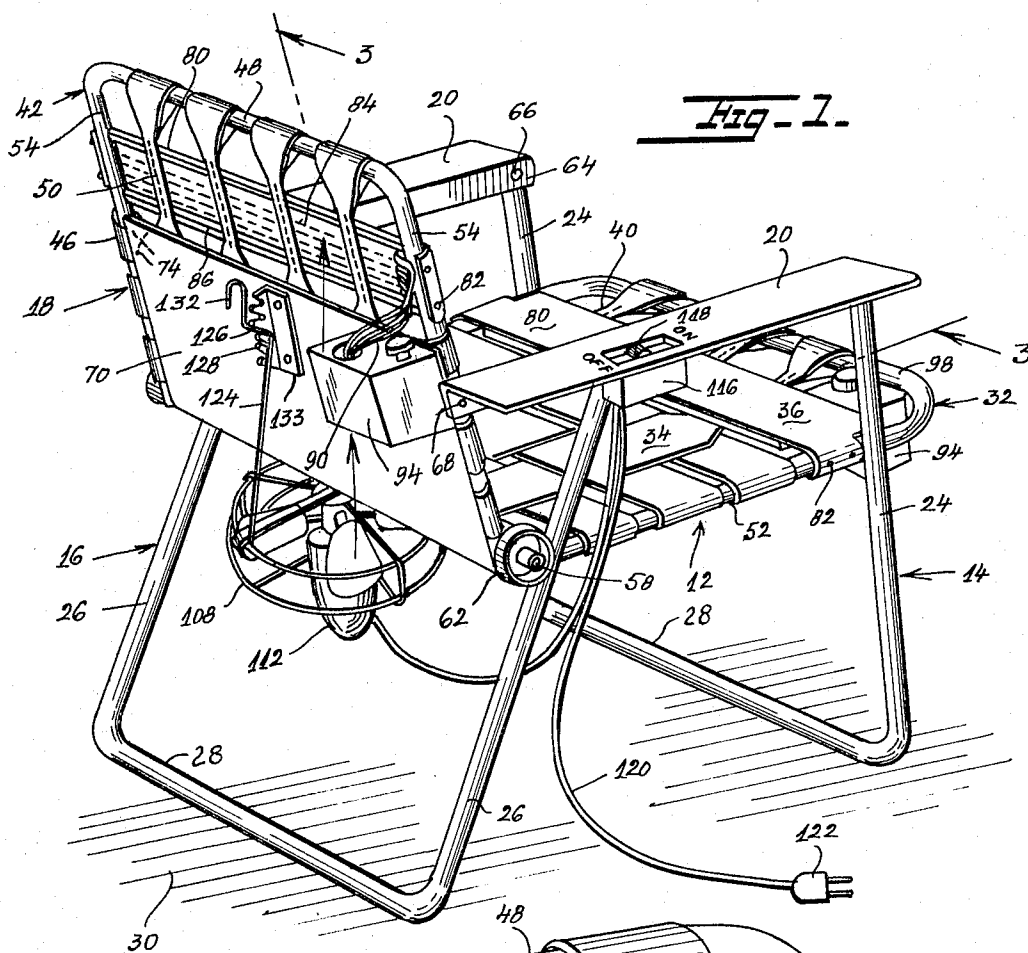


Fig. 1.

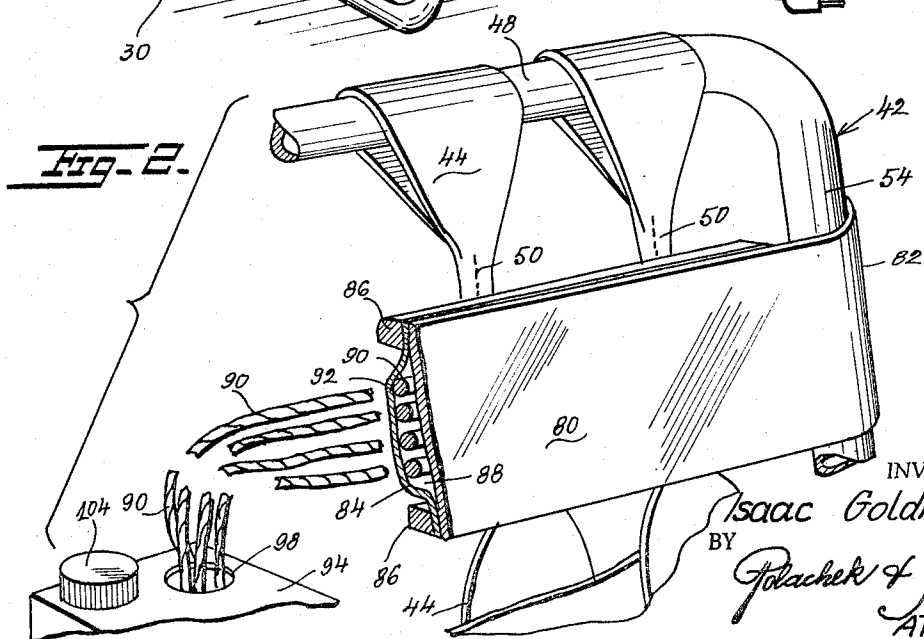


Fig. 2.

INVENTOR
Isaac Goldmerstein
BY
Jolachek & Saulsbury
ATTORNEYS.

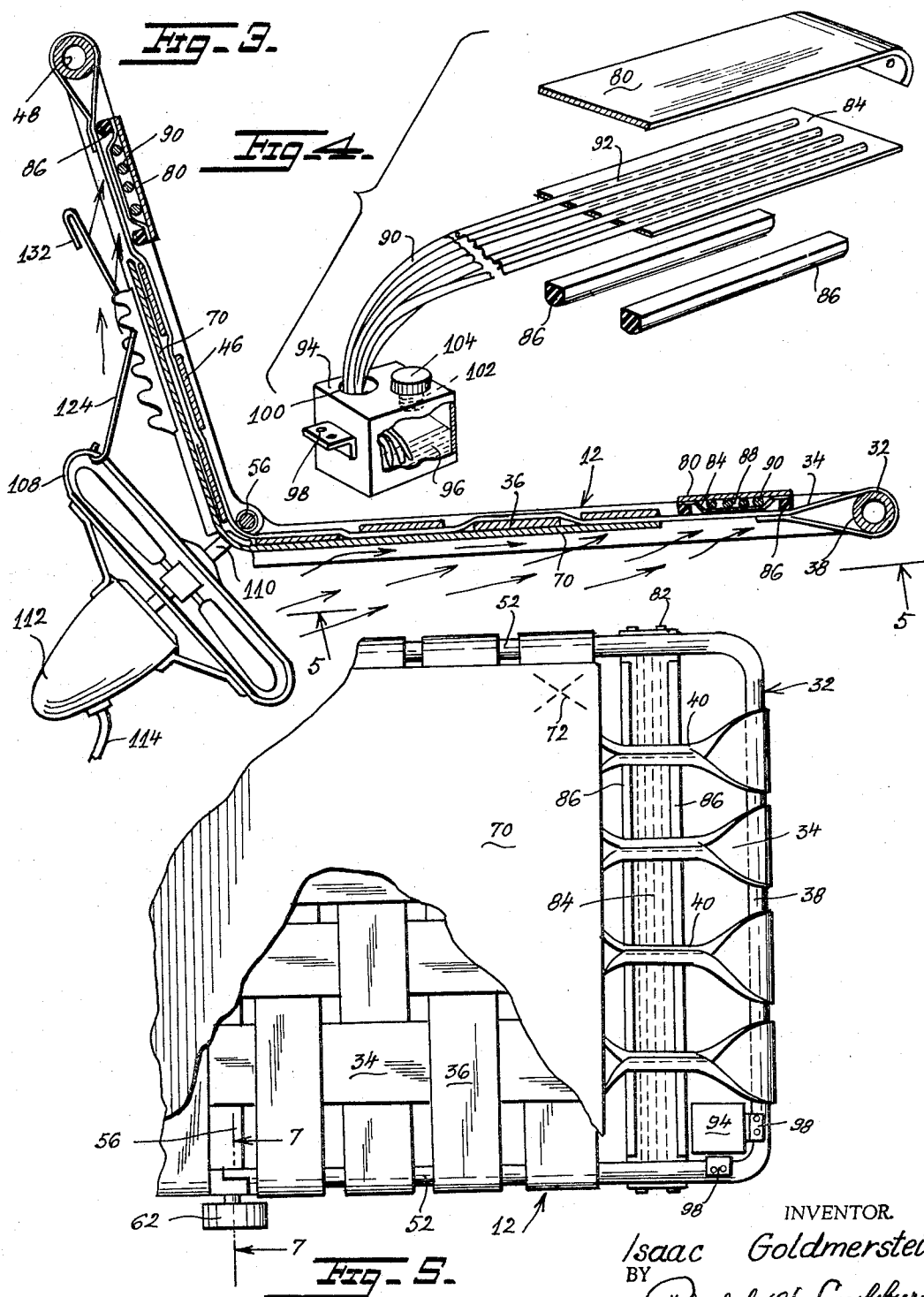
Jan. 3, 1967

I. GOLDMERSTEIN
COOLING MEANS FOR CHAIRS

3,295,886

Filed Nov. 19, 1964

3 Sheets-Sheet 2



INVENTOR
Isaac Goldmerstein
BY
Folachek & Faulstich
ATTORNEYS.

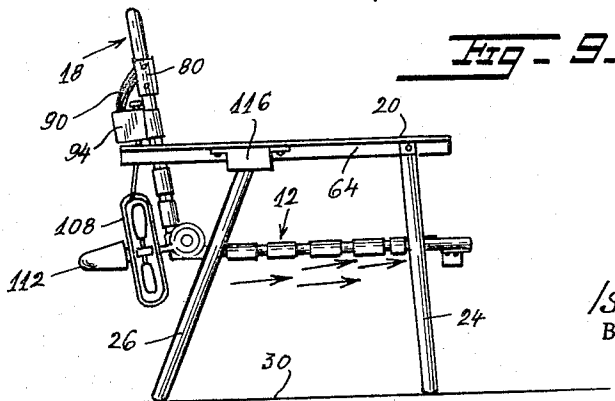
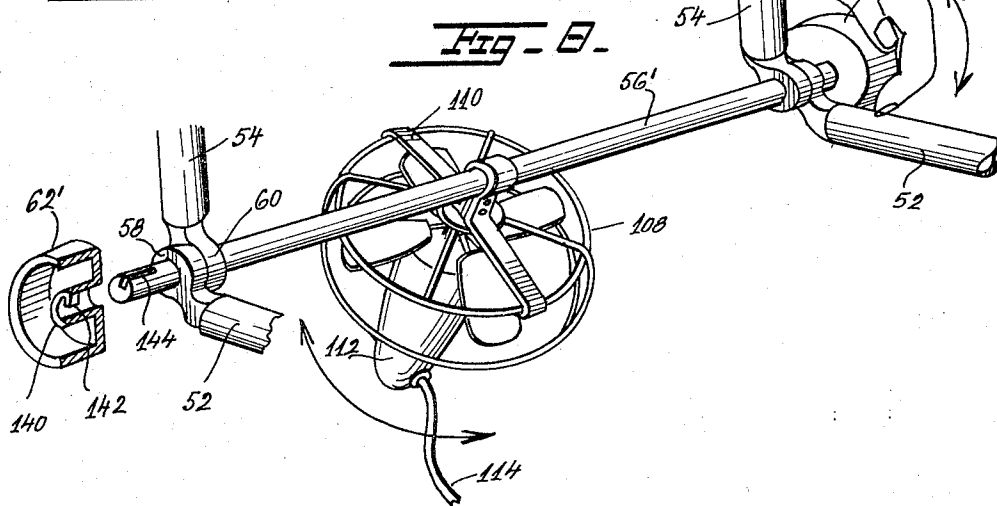
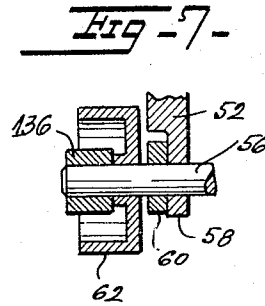
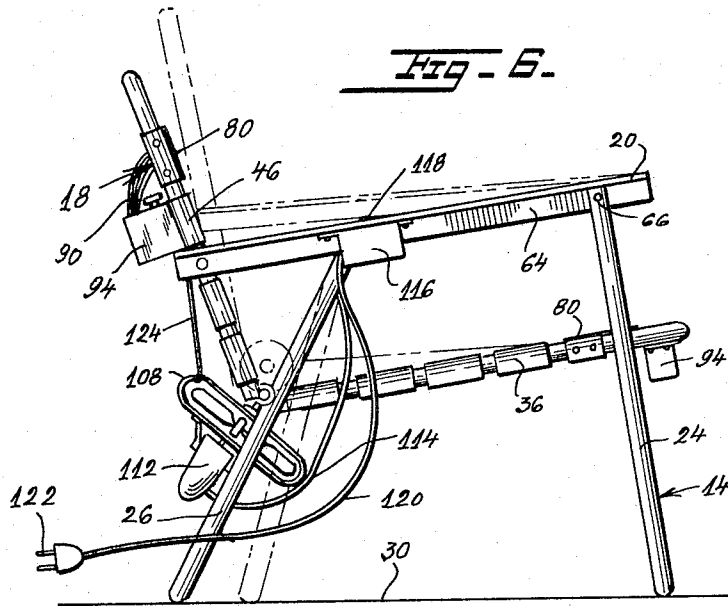
Jan. 3, 1967

I. GOLDMERSTEIN
COOLING MEANS FOR CHAIRS

3,295,886

Filed Nov. 19, 1964

3 Sheets-Sheet 3



INVENTOR.
Isaac Goldmerstein
BY *Jolachek & Saulsbury*
ATTORNEYS.

1

3,295,886
COOLING MEANS FOR CHAIRS
 Isaac Goldmerstein, 210 Riverside Drive,
 New York, N.Y. 10032
 Filed Nov. 19, 1964, Ser. No. 412,553
 12 Claims. (Cl. 297—180)

This invention relates to folding chairs and more particularly to chairs for cooling the occupants.

A principal object of the present invention is to provide a chair with cooling means in the seat portion and in the back rest portion of the chair.

Another object of the invention is to provide a chair with a cooling band at the forward end of the seat portion and with a cooling band at the top end of the back rest portion.

A further object of the invention is to provide a chair with a vapor cooled band at the forward end of the seat portion, a vapor cooled band at the top end of the back rest portion and an electric fan disposed underneath the seat portion at the rear increasing the evaporation of the sponge ropes and as a result increasing the cooling or the vapor-cooled band, at the top of the back rest and over the band at the front of the seat.

Yet another object of the invention is to provide a chair of this kind with a pivotal back rest and means for holding the back rest in moved adjusted position.

Still another object of the invention is to provide a chair of this kind with an adjustably-mounted electric fan and means for adjusting the position of the fan.

For further comprehension of the invention and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a rear perspective view of a chair embodying the invention.

FIG. 2 is a fragmentary side elevational view of a portion of the top of the back rest of the chair, parts being shown broken away.

FIG. 3 is an enlarged sectional view taken on the line 3—3 of FIG. 1 showing the electric fan in tilted adjusted position.

FIG. 4 is a disassembled perspective view of a fragment of a cooling band showing its connection to the moistening supply, parts being shown broken away.

FIG. 5 is a bottom plan view of the seat as seen from the line 5—5 of FIG. 3, parts being shown broken away.

FIG. 6 is a side elevational view of the chair showing the electric fan in adjusted position in full lines and the back rest in adjusted position in dot-dash lines.

FIG. 7 is an enlarged sectional view taken on the line 7—7 of FIG. 5.

FIG. 8 is a perspective view of the shaft mounting the back rest and electric fan with modified means for rotating said shaft.

FIG. 9 is a view similar to FIG. 6 showing the seat, back rest and electric fan in adjusted position.

Referring now in detail to the various views of the drawings, in FIG. 1 a wicker chair 10 is illustrated embodying the invention. The chair 10 comprises a rectangular seat 12 supported for movement on a front ground-engaging U-shaped tubular metal frame 14 and a rear ground-engaging U-shaped tubular metal frame 16. A back rest 18 is pivotally connected to the rear end of the seat 12 and flanged flat arm rests 20, 20 are suitably supported on the top ends of the legs 24, 24 and 26, 26 of the U-shaped frames 14 and 16, respectively, the bight portions 28, 28 of the frames 14 and 16 resting upon the supporting surface 30. The frame 12 is supported con-

2

ventionally on front and rear frames 14 and 16, respectively, and back rest 18.

The seat 12 comprises a U-shaped tubular metal frame 32 over which longitudinal rectangular strips 34 and transverse rectangular strips 36 of wicker are stretched in criss-cross fashion. Adjacent the bight portion 38 of the frame 32 at the front of the seat, the longitudinal strips 34 are reduced in width to form narrow portions 40.

The back rest 18 comprises an inverted U-shaped tubular metal frame 42 over which longitudinal rectangular strips 44 and transverse rectangular strips 46 of wicker are stretched in criss-cross fashion. Adjacent the bight portion 48 of the frame 42 adjacent the top of the back rest, the longitudinal strips 44 which are continuations of strips 34, are reduced in width to form narrow portions 50.

The free ends of the legs 52, 52 and 54, 54 of the seat frame 32 and back rest frame 42 respectively are pivotally joined by a round shaft 56 which extends across the space between said ends and extends through juxtaposed perforated ears 58 and 60 on the legs 52 and 54, respectively, and therebeyond. Perforated flanged discs 62 are mounted on the protruding ends of the shaft 56 disposed in line with the legs 26 of the rear U-shaped frame 16.

The top free ends of the U-shaped frames 14 and 16 are pivotally connected to the flange 64 of the arm rests 20 by pivot pins 66 and the legs 54 of the inverted U-shaped frame 42 of the back rest 18 are connected to the flange 64 of the arm rests by pivot pins 68.

A thin elongated rectangular strip 70 is suitably secured to the transverse strips 46 of the back rest 18 and to the transverse strips 36 of the seat 12 at the corners of said strip 70 as indicated at 72 and 74, respectively. The strip 70 ends just short of the narrow portions of the wicker strips and serves as a backing and reinforcing strip for the wicker strips as best seen in FIG. 3, and serves to maintain a maximum quantity of air coming from the fan to the vapor-cooled bands. This increases the evaporation and accordingly the cooling of the bands.

In accordance with the present invention, mechanism is provided at the front end of the seat 12 and at the top end of the back rest 18 for cooling the occupant of the chair. For this purpose, thin rectangular-shaped metal plates 80, 80 are placed across the narrow portions 40 of the seat 12 and across the narrow portions 50 of the back rest 18 and secured to the legs of the frames 32 and 42, respectively, by rivets 82 extending through holes in the ends of the plates that are curved over the legs of the frames. Thin absorbent or cotton sheets 84, 84 of a shape similar to the plates 80, 80 are clamped along the long edges thereof to the long edges of the plates 80 by rubber bars 86, the edges of the sheets and bars being secured in place by adhesive, the remainder of the sheets being loosely spaced from the plates 80. The plates 80 and sheets 84 define elongated compartments 88 in which are placed a plurality of ropes 90 of wick or sponge or other wick-like material, the ropes being stitched to the sheets 84 as indicated at 92, extending outwardly of the compartments 88 and being connected to water supplies consisting of box-like containers 94, each having a supply of water 96. The container 94 at the front of the seat 12 is secured to the frame 32 by means of brackets 98 carried by the box and riveted to the frame. The container 94 for supplying the water to the ropes 90 on the back rest 18 is similarly fastened by brackets to the plastic sheet 70 at the rear end of the seat 12. The free ends of the ropes 90 pass through openings 100 in the top of the containers 94 and are immersed in the water 96 in the containers. The ropes are moistened against the plates 80, 80 on which the occupant sits and against through evaporation of the sponge ropes resulting in a

cooling of the plates 80, 80. The containers 94 are provided with openings 102 for supplying water thereto which openings are sealed by removable plugs 104.

Another cooling medium in the form of an electric fan 108 is swivelly mounted on the shaft 56 midway the ends thereof, by means of a metal strap 110 connected at its ends to the frame of the fan and looped at its center around the shaft. An electric motor 112 is suitably fastened to the frame of the fan and is supplied with a conductor 114 leading to an electric switch 116 with an actuating button 118, mounted on one of the arm rests 20. A cord 120 with plug 122 leads from the switch for connection to a source of E.M.F.

The mounting of the fan 108 permits it to be turned 90° in a vertical plane and for this purpose an elongated actuating rod 124 is provided which rod has one end hooked around the frame of the fan. The rod is formed with an offset portion extending at right angles to the plane of the rod and adapted to seat in and interlock with spaced teeth 128 on a flanged bracket 130 riveted to the sheet 70 to hold the fan in adjusted moved position. The other end of the rod terminates in a looped handle portion 132 for manipulating the rod. By pulling upwardly on the rod, the fan 108 may be swung from a horizontal plane as seen in FIG. 1 to a vertical plane as seen in FIG. 9 or any desired angle therebetween.

In operation, the angular relationship between the seat 12 and back rest 18 is readily adjusted by removing the flanged disc 62 which is held in position on the end of shaft 56 by means of a rubber washer 136 which is easily slipped off of the shaft.

When the disc 62 has been removed, the back rest can be manually swung forwardly or rearwardly as shown in FIG. 6 to desired position after which the disc 62 is replaced on the shaft 56 with its flange against the adjacent leg 26 of the rear frame 16 thereby frictionally holding the parts in moved adjusted position.

The ropes 90 being submerged in the water 96 in containers 94 are kept moistened by capillary action so that the plates 80, 80 on which the occupant sits and against which his back rests are always in cooled condition. This cooling action is supplemented by the electric fan 108 which when turned on increases the evaporation of the sponge ropes under both plates 80, 80 and increases according to the cooling of both plates simultaneously.

If it is desired to cool the seat 12 more than the back rest 18, the fan is moved to a vertical position as shown in FIG. 9 whereupon the air is directed forwardly under the seat. In order to blow most of the air upwardly to cool the back rest 18, the fan is moved to a horizontal position as shown in FIG. 1. This adjustment of the fan is accomplished manually by means of the rod 124.

In FIG. 8 a modified form of flanged disc 62' is shown for manually turning the shaft 56' so as to change the angular relationship of the fan 108 to the seat and back rest. The disc 62' is formed with an inwardly extending hub portion 140 around the perforation therein and depending from the inner surface of the hub portion there is a lug 142 adapted to coact with a slot 144 formed in the end of the shaft 56' and intersecting the end edge thereof.

When the lug 142 is interlocked with the slot 144, the shaft is readily turned which in turn rotates the fan 108 fastened to the shaft by strap 110.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

What is claimed is:

1. A chair comprising supporting legs, a seat supported on said legs, a back rest pivotally connected at its bottom end to the rear end of the seat, including a plate, a supply

of water supported on the plate, and an electric fan swivelly mounted at the junction of the seat and back rest, for cooling said plate by evaporation of moisture, from said supply.

2. A chair comprising supporting legs, a seat supported on said legs, a back rest pivotally connected at its bottom end to the rear end of the seat, including a plate, a supply of water supported on the plate, an electric fan swivelly mounted at the junction of the seat and back rest for cooling said plate by evaporation of moisture from said supply, an electric motor carried by said fan, and means for connecting the motor to a source of electric motive force.

3. A chair comprising supporting legs, a seat supported on said legs, a back rest pivotally connected at its bottom end to the rear end of the seat, including a lining of sponge material, arm rests supported by said legs, an electric fan swivelly mounted at the junction of the seat and back rest, an electric motor carried by said fan, and means for connecting the motor to a source of electric motive force, said means including an electric switch mounted on one of said arm rests, said fan being enclosed in a frame, the mounting for the fan including a strap secured at its ends to the frame of the fan, a flanged plate-like bracket on the back rest, teeth on the flange of the bracket, an elongated round rod having one end hooked around a stationary part of the fan, the other end of the rod being offset and adapted to interlock with the teeth on the flange and a hooked handle on the extremity of said other end.

4. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, a metal plate extending across the front of the seat, a lining of sponge material on the undersurface of said plate, and material extending outwardly of the plate and being connected to a supply of water, said material including ropes of sponge material.

5. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, a metal plate extending across the top of the back rest, a lining of sponge-like material on the rear surface of said plate, said material extending outwardly of the plate and being connected to a supply of water, said material including sponge material.

6. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with a bight at the front of the seat, and strips of wicker material criss-crossed over the frame, and a metal plate extending across the wicker material at the front of the seat, said plate having a lining of wick-like material connected at one end to a source of water.

7. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with the bight portion at the front of the seat, and strips of wicker material criss-crossed over the frame, and a metal plate extending across the wicker material at the front of the seat, ropes of wick-like material lining the undersurface of the plate, and a container of water supported on the bight portion of the U-shaped frame, one end of the ropes being immersed in the water in said container.

8. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with the bight portion at the front of the seat, and strips of wicker material criss-crossed over the frame, and a metal plate extending across the wicker material at the front of the seat, ropes of wick-like material lining the under surface of the plate, and a container of water supported on the

5

bight of the U-shaped frame, one end of the ropes being immersed in the water in said container, an electric fan adjustably mounted on the rear end of the seat, an electric motor carried by the fan, means for connecting the motor to a source of electric motive force, and means on the back rest for adjusting the position of said fan.

9. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with the bight portion at the front of the seat, and strips of wicker material criss-crossed over the frame, and a metal plate extending across the wicker material at the front of the seat, ropes of wick-like material lining the under surface of the plate, and a container of water supported on the bight of the U-shaped frame, one end of the ropes being immersed in the water in said container, an electric fan adjustably mounted on the rear end of the seat, an electric motor carried by the fan, means for connecting the motor to a source of electric motive force, and means on the back rest for adjusting the position of said fan, said fan adjusting means including a flanged plate-like bracket on the back rest, teeth on the flange of the bracket, an elongated round rod having one end hooked around a stationary part of the fan, the other end of the rod being offset and adapted to interlock with the teeth on the flange, and a hooked handle on the extremity of said other end.

10. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with the bight at the front of the seat, and strips of wicker material criss-crossed over the frame, said back rest constituted by an inverted U-shaped frame with a bight portion of the frame at the top, strips of wicker material criss-crossed over the inverted U-shaped frame, a metal plate extending across the wicker material at the top of the inverted U-shaped frame, ropes of wick-like material lining the rear surface of the plate, and a container of water supported on the back rest, one end of the ropes being immersed in the water in said container.

11. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with the bight at the front of the seat, and strips of wicker material criss-crossed over the frame, said back rest constituted by

6

an inverted U-shaped frame with a bight portion of the frame at the top, strips of wicker material criss-crossed over the inverted U-shaped frame, a metal plate extending across the wicker material at the top of the inverted U-shaped frame, ropes of wick-like material lining the rear surface of the plate, and a container of water supported on the rear end of the seat at the bottom of the back rest, one end of the ropes being immersed in the water in said container, an electric fan adjustably mounted on the rear end of the seat, an electric motor carried by the fan, means for connecting the motor to a source of electric motive force, and means on the back rest for adjusting the position of said fan.

12. A chair comprising supporting front and rear legs, a flat rectangular seat supported on said legs, a back rest pivotally connected at its bottom end to the rear of the seat, said seat constituted by a U-shaped frame with the bight portion at the front of the seat, strips of wicker material criss-crossed over the frame, a rotatable shaft extending across the free ends of the legs of the U-shaped frame, a back rest, said back rest constituted by an inverted U-shaped frame with the bight portion at the top, strips of wicker material criss-crossed over the frame, the free ends of the legs of the inverted U-shaped frame pivotally connected to said shaft, an electric fan fixed to said shaft midway its ends, said shaft having slotted ends, and a flanged perforated disc removably mounted on each slotted end of the shaft, said disc having a central hub portion extending radially of the perforation therein, and a lug depending from the inner surface of said hub portion adapted to interlock with the slot in the end of the shaft for turning said shaft to adjust the position of the fan.

References Cited by the Examiner

UNITED STATES PATENTS

1,537,460	5/1925	Campbell	230—274
1,593,066	7/1926	Gaston	297—180
2,004,106	6/1935	Gaston	297—180
2,102,418	12/1937	Kirsch	230—273
2,544,506	3/1951	Kronhaus	297—180
2,703,134	3/1955	Mossor	230—243
3,165,359	1/1965	Ashkouti	297—452

DONLEY J. STOCKING, *Primary Examiner.*

LAURENCE V. EFNER, *Examiner.*