Dec. 14, 1965 J. L. NAUGHTON 3,223,448

ARM SUPPORT

Filed June 18, 1964 3 Sheets-Sheet 1

FIG. 3

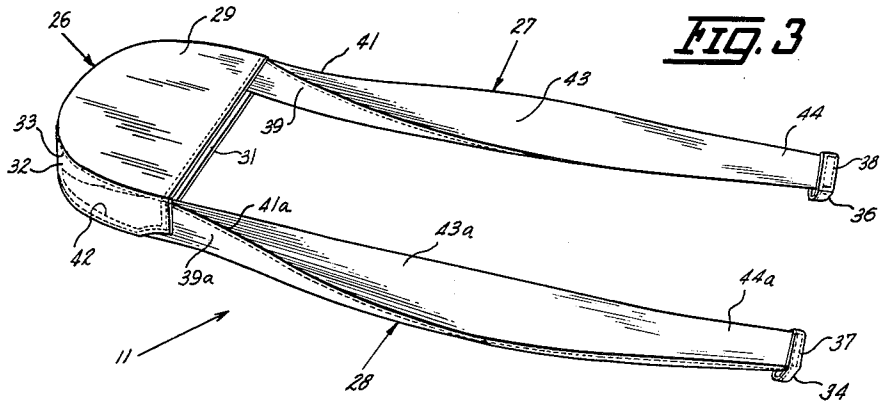
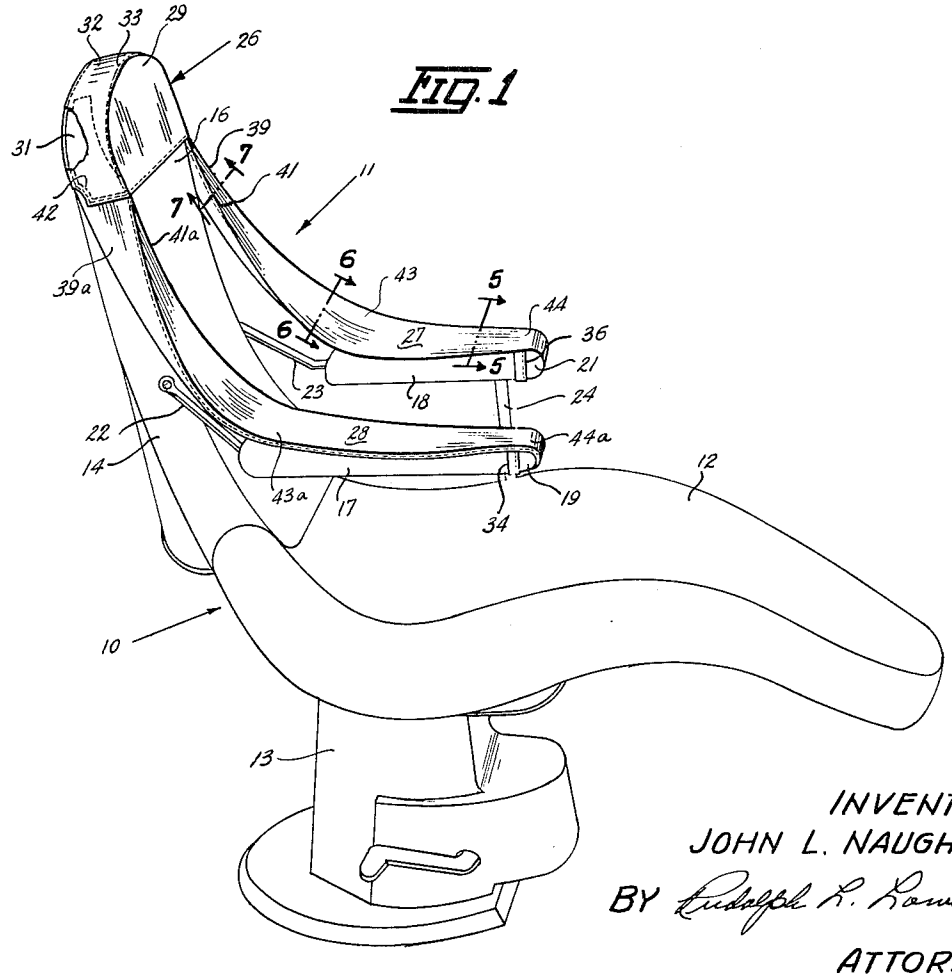


FIG. 1



INVENTOR.
JOHN L. NAUGHTON
BY Rudolph R. Lowell
ATTORNEY.

Dec. 14, 1965 J. L. NAUGHTON 3,223,448

ARM SUPPORT

Filed June 18, 1964 3 Sheets-Sheet 2

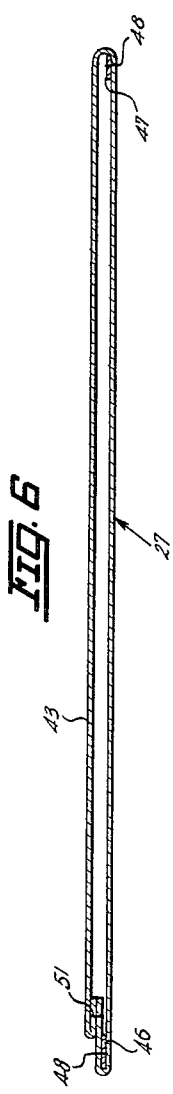


FIG. 6

FIG. 7

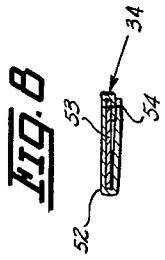


FIG. 8

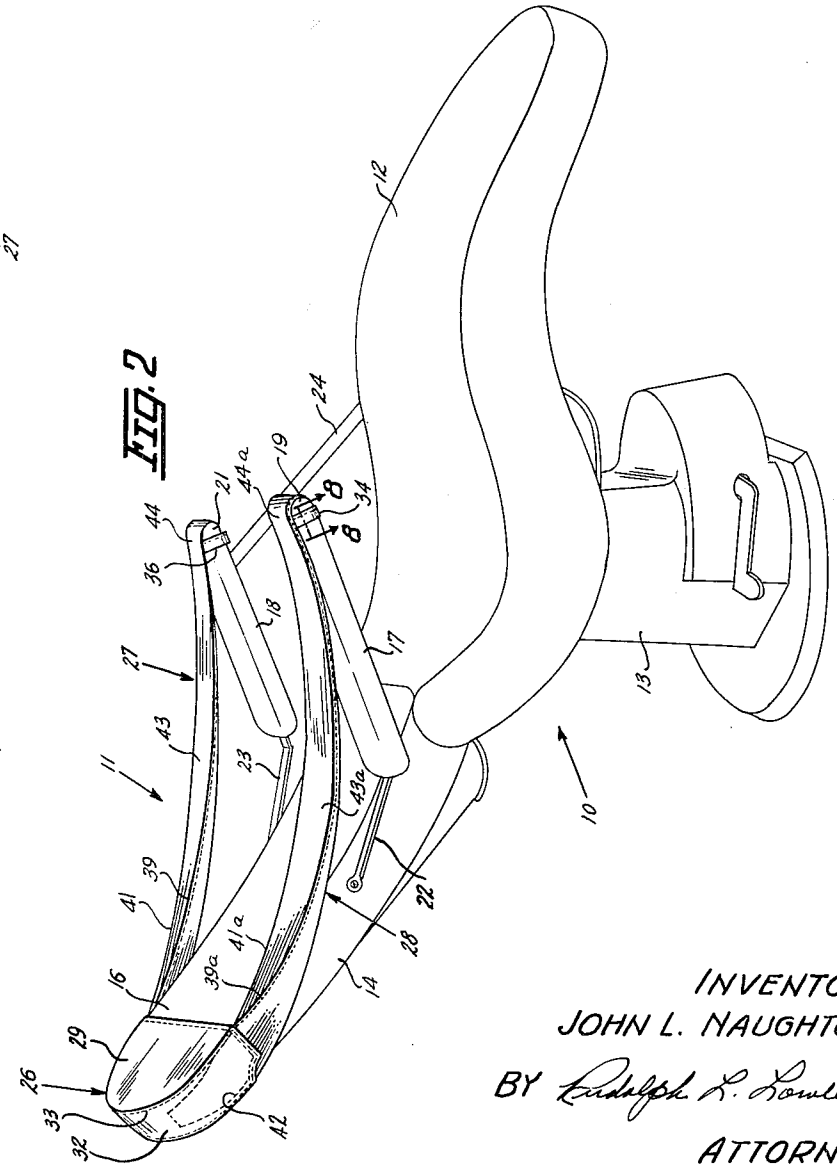


FIG. 2

INVENTOR.
JOHN L. NAUGHTON
BY Rudolph L. Lowell
ATTORNEY.

Dec. 14, 1965 J. L. NAUGHTON 3,223,448

ARM SUPPORT

Filed June 18, 1964 3 Sheets-Sheet 3

Fig. 4

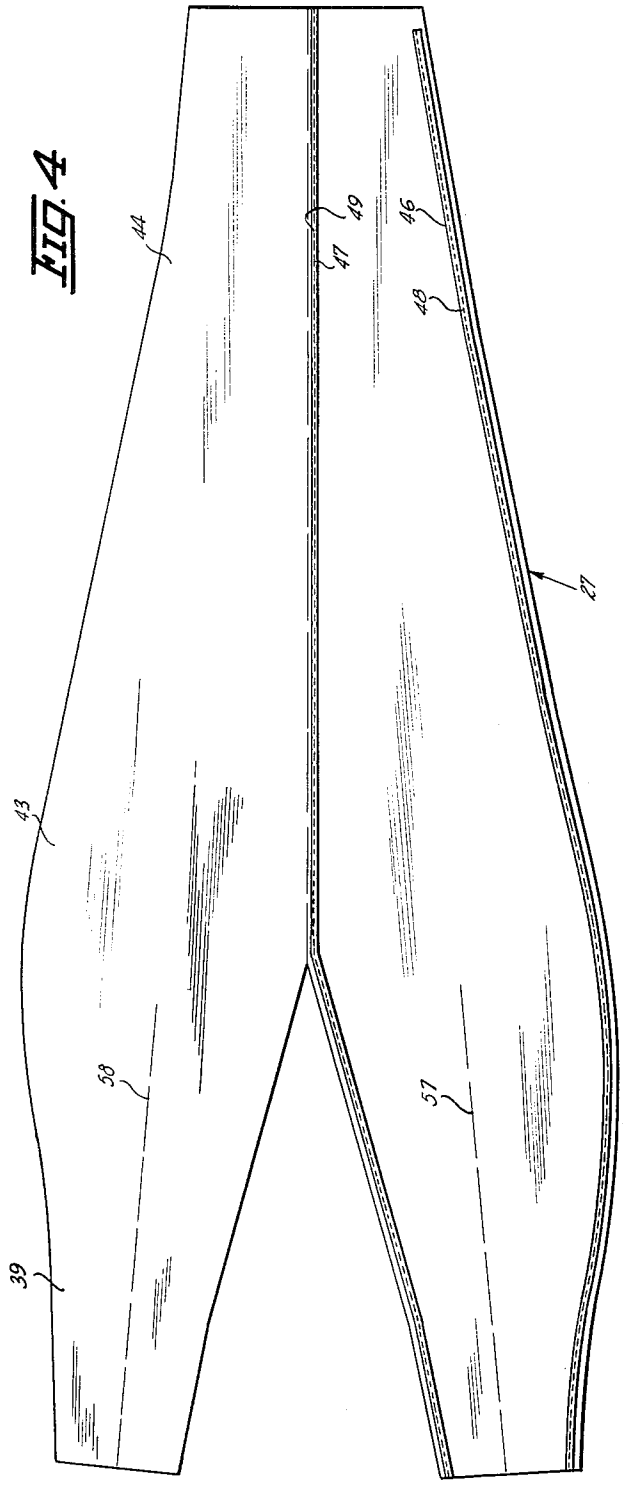
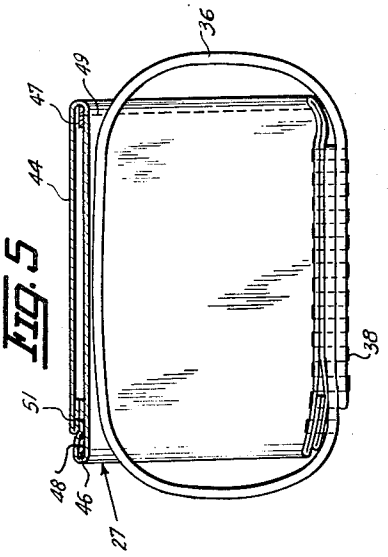


Fig. 5



INVENTOR.
JOHN L. NAUGHTON
BY Rudolph L. Lowell
ATTORNEY.

United States Patent Office 3,223,448 Patented Dec. 14, 1965

3,223,448

ARM SUPPORT

John L. Naughton, Des Moines, Iowa, assignor to Den-Tal-Ez Chair Manufacturing Co., Des Moines, Iowa, a corporation of Iowa

Filed June 18, 1964, Ser. No. 376,041
6 Claims. (Cl. 297—418)

This invention relates to auxiliary apparatus for a chair and more particularly to a patient arm support for a contour dental chair.

It is the object of the invention to provide improved patient arm rests for a contour dental chair.

Another object of the invention is to provide a flexible arm support attachable to a chair for holding the arms and shoulders of a person seated in a chair.

A further object of the invention is to provide a chair arm support having flexible arm rests which do not interfere with a person getting into or out of the chair.

An additional object of the invention is to provide a removable arm support for a contour dental chair which is sturdy in construction, economical in cost and reliable and efficient in use.

These and other objects and advantages of the invention will become apparent upon reference to the following description and the accompanying drawing, wherein:

FIG. 1 is a perspective view of a contour chair in an upright position equipped with the arm support of this invention;

FIG. 2 is a view similar to FIG. 1 showing the contour chair in the recline position;

FIG. 3 is a perspective view of the arm support of this invention;

FIG. 4 is an enlarged plan view of a layout blank of material of one of the arms of the arm support of this invention;

FIG. 5 is an enlarged sectional view taken along the line 5—5 of FIG. 1;

FIG. 6 is an enlarged sectional view taken along the line 6—6 of FIG. 1;

FIG. 7 is an enlarged sectional view taken along the line 7—7 of FIG. 2; and

FIG. 8 is an enlarged sectional view taken along the line 8—8 of FIG. 2.

Referring to the drawing, there is shown in FIGS. 1 and 2 a contour dental chair **10** equipped with the patient arm support indicated generally at **11** of this invention. The chair **10** comprises a curved seat and leg unit **12** carried on an upright support **13**. A back rest unit **14** is pivotally connected at its lower end to the rear section of the seat and leg unit **12**. The back rest unit **14** pivots about a horizontal axis which extends transversely of the chair and is movable to an upright position as shown in FIG. 1 and to a reclined or Trendelenburg position as shown in FIG. 2 by a power mechanism (not shown) mounted within the seat and leg unit **12**. The top or head end **16** of the back rest unit **14** is semicircular in shape. The design contour of the seat and leg unit **12** and the back rest unit **14** of the chair is disclosed in U.S. Des. Patent No. 186,104 issued to John L. Naughton, September 15, 1959.

Positioned above and on opposite sides of the seat and leg unit **12** are a pair of forwardly extended arms **17** and **18** of a generally rectangular shape having forward ends **19** and **21**, respectively. Rods **22** and **23** project rearwardly and upwardly from the rear ends of the arms **17** and **18**, respectively, and pivotally mount the arms on the

opposite sides of the back rest unit **14**. An upright support **24** is pivotally connected to the seat and leg unit **12** and to the arm **18** and functions to control the position of the arms **18** and **19** with respect to the back rest unit **14** on pivotal movement of the back rest unit **14** with respect to the seat and leg unit **12**. The mechanical construction of the chair **10** is disclosed in applicant's co-pending U.S. patent application Serial No. 292,803 filed July 1, 1963.

The patient arm support **11** is made from leather-like upholstery material, such as Naugahyde, and comprises a cap member **26** and a pair of flexible arm members **27** and **28** secured to opposite sides of the cap member. In use, the arm members **27** and **28** function as slings or rests for the arms and shoulders of a patient seated in the chair **10**.

As shown in FIGS. 1 and 3, the cap member **26** has semicircular-shaped front and back sections **29** and **31**. A side strip **32** having a width substantially equal to the thickness of the head end **16** of the back rest **14** is secured by stitches **33** to the curved peripheral sections of the front and back sections **29** and **31** thereby forming a semicircular-shaped pocket for accommodating the semicircular head end **16**. Referring to FIGS. 1 and 2, when the cap member **26** is positioned over the head end **16** the arm members **27** and **28** are extended forwardly and downwardly above the chair arms **18** and **17**, respectively. Loops **34** and **36** secured to the forward ends of the arm members **28** and **27** are positioned about the forward chair arm ends **19** and **21** to connect the arm members **28** and **27** to the chair arms **17** and **18**. As shown in FIG. 3, stitches **37** and **38** fasten the loops **34** and **36** to the arm members **28** and **27**, respectively.

Referring to FIG. **5**, the end sections of the loop **36** are positioned in an overlapped relation with the stitches **38** securing the end sections to each other and to the arm member **27**. The loop **34** is secured in a similar manner to the arm member **28**.

Since the arm member **27** and **28** are identical in construction the following description is limited to the arm member **27** with corresponding structure of the arm member **28** having identical reference numbers with the suffix *a*. As shown in FIG. 3, the upper end section of the arm member **27** is longitudinally folded in a side-by-side relation forming upright sides **39** and **41** which are positioned adjacent the inside of the side strip **32** of the cap member **26** and secured thereto with stitches **42**. The cap member **26** holds the upper end section of the arm member **27** in an upright plane. From the upright sides **39** and **41** the arm member **27** increases in width and gradually changes in shape to a relatively flat horizontal central section **43**. From the central section **43** the arm member **27** remains horizontal but decreases in width toward the forward end section **44**.

The layout blank for the arm member **27** is shown in FIG. 4 and comprises a generally Y-shape flat upholstery material reinforced along its edges with strip material **46** and **47**, such as nylon tape, secured to the inside of the upholstery material by stitches **48** and **49**, respectively. The tapes **46** and **47** are positioned along the midsection of the material and up one side of the leg of the Y. The tape **46** is spaced a short distance from the edge of the material so that when the material is folded in a back-to-back relation, as shown in FIGS. 5 to 7, the nylon tapes **46** and **47** are positioned adjacent the folded sections of the material. Stitches **51** connect the adjacent outside edges of the material.

Referring to FIG. 8, the loop **34** comprises a sheet of upholstery material **52** positioned about reinforcing tape or webbing material **53**. The opposite ends of the material **52** are positioned in an overlapped relation and are secured together with the tape **53** by stitches **54**.

In the construction of the patient arm support **11** after the tapes **46** and **47** are stitched to the blank material as shown in FIG. 4, the material is folded in an overlapped relation along the center line thereof. The opposite sides of the blank are connected together by stitches **51**. The upper end section of the arm member **27** is then folded along the fold lines **57** and **58** thereby forming the upright sides **39** and **41** as shown in FIG. 7. Stitches **42** secure this section to the inside of the side strip **32** of the cap member **26**. The arm member **28** is attached in a similar manner to the opposite side of the cap member **26**.

In the assembly of the patient arm support **11** on the dental chair **10** the cap member **26** is fitted on the semicircular head end **16** of the back rest **14** with the arm members **28** and **27** projecting forwardly and over the forward ends **19** and **21** of the arms **17** and **18**. The loops **34** and **36** are positioned about the forward ends **19** and **21** so that the forward end sections **44***a* and **44** of the arm members **28** and **27** project downwardly and under the forward ends **19** and **21** of the arms **17** and **18**, respectively.

In use, when the back rest **14** of the chair **10** is in an upright position as shown in FIG. 1 the arm members **28** and **27** are positioned on top of the chair arms **17** and **18** and generally follow the contour of the back rest **14**. Thus, the arm members **27** and **28** have a minimum of interference with a patient entering or leaving the chair **10**.

The patient is moved to a reclined position by pivoting the back rest unit **14** rearwardly with respect to the seat and leg unit **12**. The arm members **17** and **18** being connected to the seat and leg unit **12** by the upright support **24** pivot with respect to the back rest unit **14** thereby increasing the distance between the forward ends **19** and **21** of the arms **17** and **18** and the head section **16** of the back rest unit **14**. This relative movement places the arm members **27** and **28** under tension and in a substantially straight line position. In this position the mid-sections **43** and **43***a* of the arm members have a slight concave contour forming troughs for receiving the arms of the patient. Thus the arm members **27** and **28** provide additional support for the arms and shoulders of the patient and allow the doctor to move in closer to his field of operation without body contact with the patient.

Before the patient leaves the chair the back rest unit **14** is moved back to the upright position as shown in FIG. 1. This relaxes the tension on the arm members **28** and **27** causing them to fall back into engagement with the chair arms **17** and **18**. With the raising of the chair arm **17** the patient is free to move out from the side of the chair.

In summary the patient arm support **11** is usable with a chair having a seat unit and a back unit pivotally secured to the seat unit and movable to an upright position and a reclined position and arms extended forwardly from the back section and positioned adjacent the opposite sides of the seat section. The patient arm support **11** comprises a cap member **26** positionable over the top end of the back section and a pair of flexible arm members **27** and **28** secured to the cap member **26** and extended downwardly therefrom and attachable to the arms of the chair. The flexible arm members **27** and **28** thus are pendently suspended between the arms of the chair and the upper end of the back rest and function as supports or rests for the arms of a patient seated in the chair.

While there have been shown, described, and pointed out the fundamental novel features of the invention, it is

to be understood that various omissions, substitutions, changes in form, and details of the apparatus illustrated may be made by those skilled in the art without departing from the spirit of the invention. This invention is to be limited only as indicated by the scope of the following claims.

I claim:

1. Arm support apparatus for a chair having a seat unit, a back rest unit having a head end and a bottom end pivotally secured to the seat unit and movable to an upright position and a reclined position, and arms pivotally mounted on the back rest unit and extended forwardly therefrom adjacent opposite sides of the seat unit comprising:

(a) a cap member having opposite sides, said cap member being positionable over the head end of the back rest unit,

(b) a pair of flexible arm members, one end of one arm member positionable adjacent and secured to one of the sides of the cap member and the corresponding end of the other arm member positionable adjacent and secured to the other side of the cap member, and

(c) means secured to the opposite ends of the arm members for attaching said members to the forward ends of the chair arms whereby when the back rest unit is in the reclined position the arm members provide rests for the arms of a person seated in the chair.

2. Arm support apparatus for a chair having a seat unit, a back unit pivotally secured to the seat unit and movable to upright and reclined positions, and arms positioned adjacent the sides of the seat unit and projected forwardly from the back unit comprising:

(a) a cap member having opposite sides, said cap member being positionable over the upper portion of the back unit, and

(b) arm means secured at one end thereof to the opposite sides of the cap member with the opposite end of the arm means being attachable to the adjacent arm of the chair for providing an arm rest between the back unit of the chair and said adjacent arm thereof when the back unit is in the reclined position.

3. The arm support apparatus defined in claim **2** wherein:

(a) said one end of the arm means is longitudinally folded to form upright sides which are secured to the opposite side of the cap member.

4. Arm support apparatus for a chair having a seat unit, a back unit pivotally secured to the seat unit for movement to upright and reclined positions, and a support member projected upwardly from a side of the seat unit comprising:

(a) a cap member having opposite sides, said cap member being positionable over the upper portion of the back unit,

(b) a flexible arm member having one end thereof secured to one side of the cap member, and

(c) means connected to the opposite end of the arm member and attachable to the upright support member whereby the arm member forms a rest for one of the arms of a person seated in the chair.

5. The arm support apparatus defined in claim **4** wherein:

(a) said one end of the arm member is longitudinally folded to form a sling for receiving a person's arm.

6. Arm support apparatus for a chair having a seat unit, a back unit pivotally secured to the seat unit for movement to upright and reclined positions, and arm rests positioned adjacent the sides of the seat unit and projected forwardly from the back unit comprising:

(a) a cap member having opposite sides, said cap member being positionable over the upper portion of the back unit,

(b) a pair of flexible arm members, each arm member having one end thereof secured to one of the sides of the cap member with the opposite end of each arm member attachable to the forward end of an arm rest, and

(c) said arm members movable toward a straight line position on movement of said back unit toward the reclined position therefor to provide a continuous arm support from a side of said cap member to the forward end of an arm rest.

References Cited by the Examiner

UNITED STATES PATENTS

1,579,585	4/1926	Wieder et al.	297—394
1,843,564	2/1932	Koken	297—421
1,933,372	10/1933	Fisher	297—218
2,713,890	7/1955	Mack	297—441
2,919,746	1/1960	Fidel	297—418
3,017,220	1/1962	Chernivsky	297—441

FRANK B. SHERRY, *Primary Examiner.*