

[54] **SPLIT BACK DENTAL CHAIR APPARATUS**

[75] Inventor: **Keith O. Rasmussen**, San Francisco, Calif.

[73] Assignee: **Hek Manufacturing Company, Inc.**, San Francisco, Calif.

[22] Filed: **July 27, 1973**

[21] Appl. No.: **383,452**

[52] U.S. Cl. **297/408, 297/410**

[51] Int. Cl. **A47c 7/36**

[58] Field of Search..... **297/353, 396, 404, 408-410**

[56] **References Cited**

UNITED STATES PATENTS

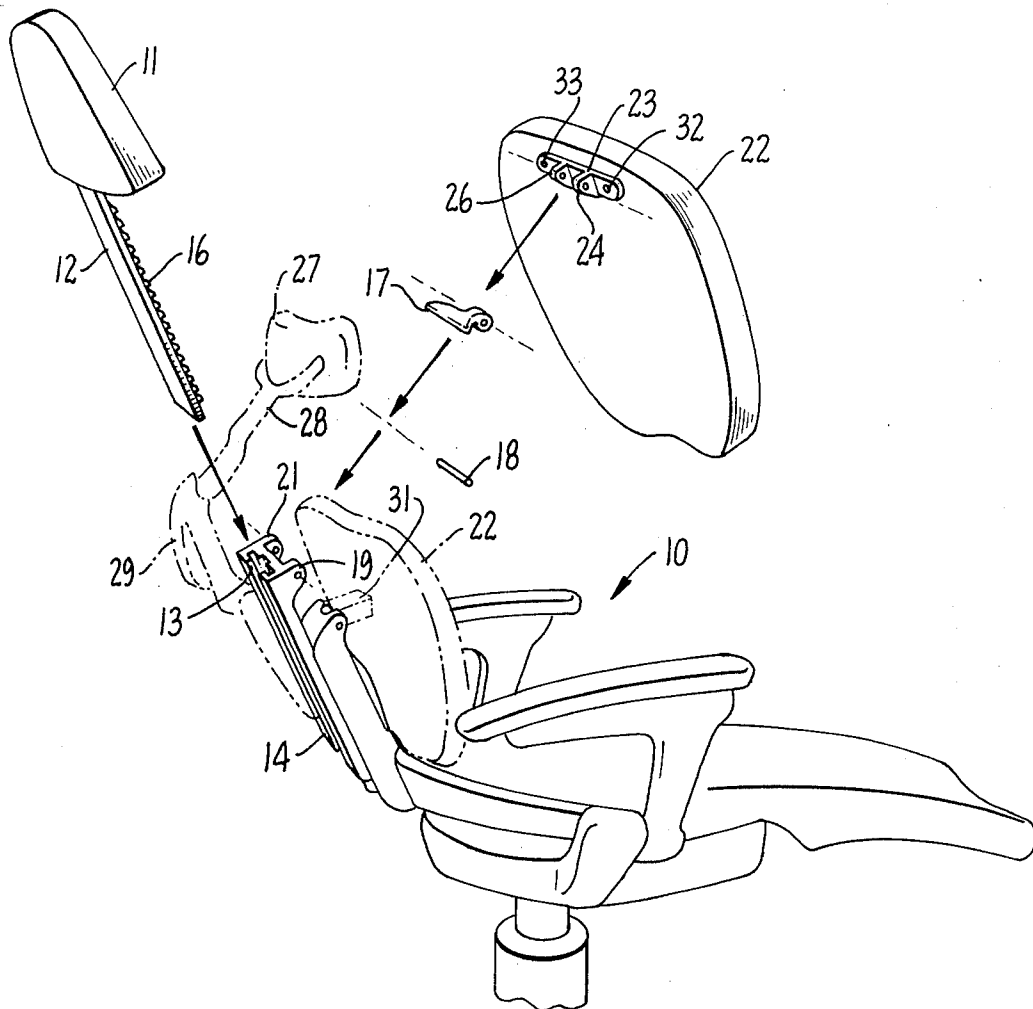
1,260,032	3/1918	Perpick.....	297/410
1,867,600	7/1932	Schwarzkopf.....	297/410
2,370,447	2/1945	Burris	297/410 X
2,985,228	5/1961	Golden	297/409
3,698,765	10/1972	Olsen	297/410

Primary Examiner—Casmir A. Nunberg
 Attorney, Agent, or Firm—Schapp and Hatch

[57] **ABSTRACT**

A dental chair conversion apparatus capable of use as a lounge-type chair and having an adjustable head rest mounted on an elongated plate slidable in the keyway of a conventional support member carried on the frame portion of the dental chair which supports the chair back. A latch is mounted through the ears provided on the support member and in the preferred embodiment the elongated plates has a rack formed thereon and the latch has a projection formed for releasably engaging the rack in ratchet fashion and in an alternative embodiment the elongated plate has a series of holes formed along its length thereon and the latch has a tooth formed for selectively engaging the holes to thereby permit manual adjustment of the height of the head rest.

4 Claims, 7 Drawing Figures



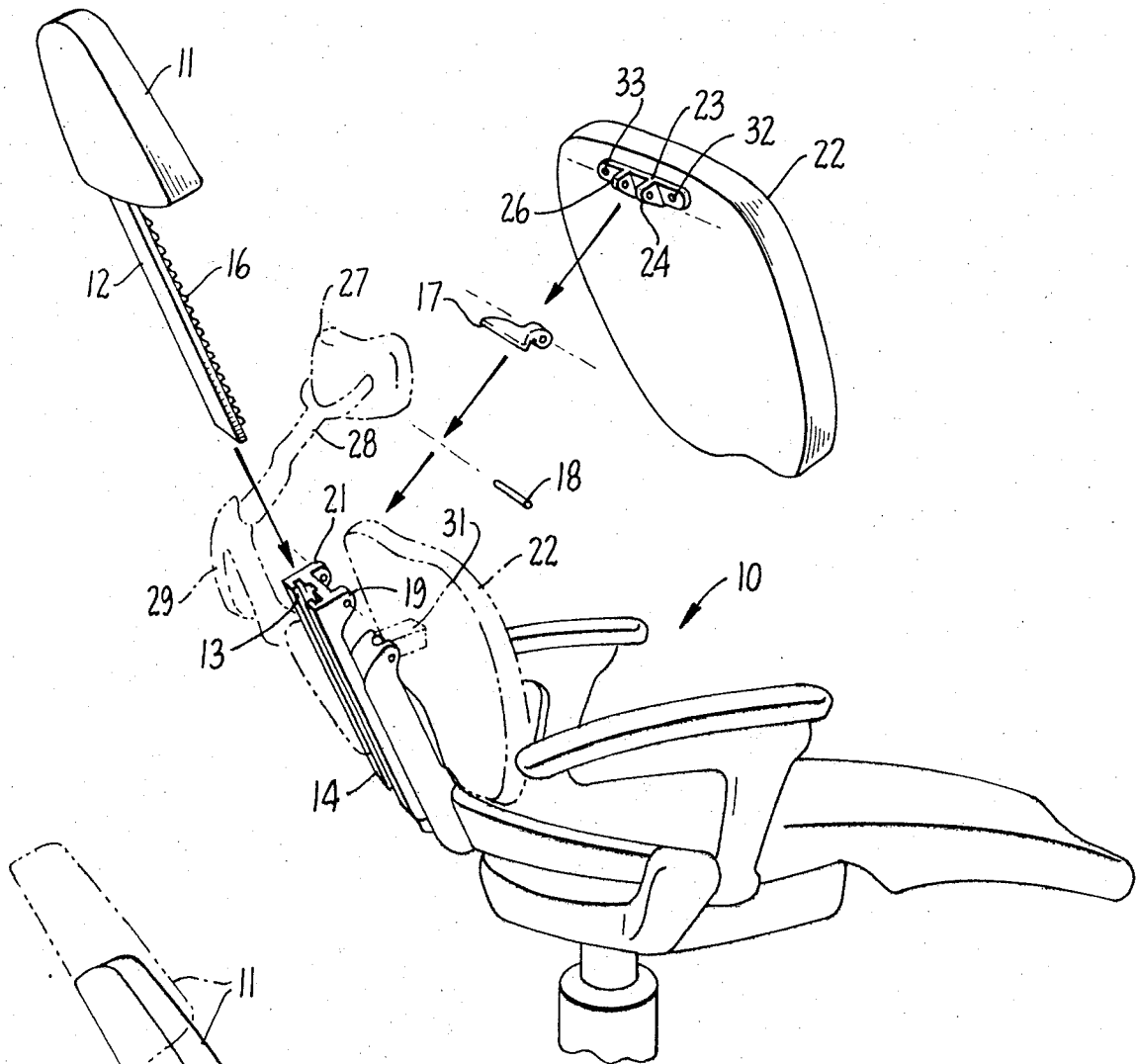


FIG. 1.

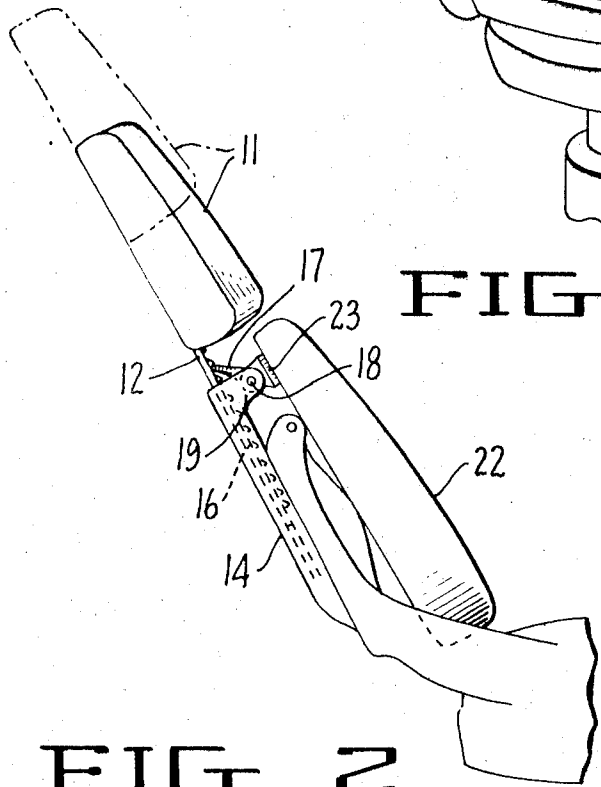


FIG. 2.

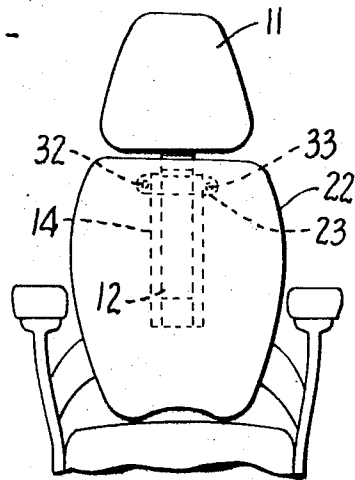


FIG. 3.

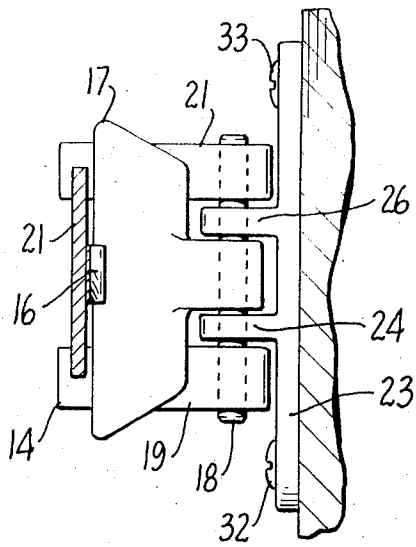


FIG. 5.

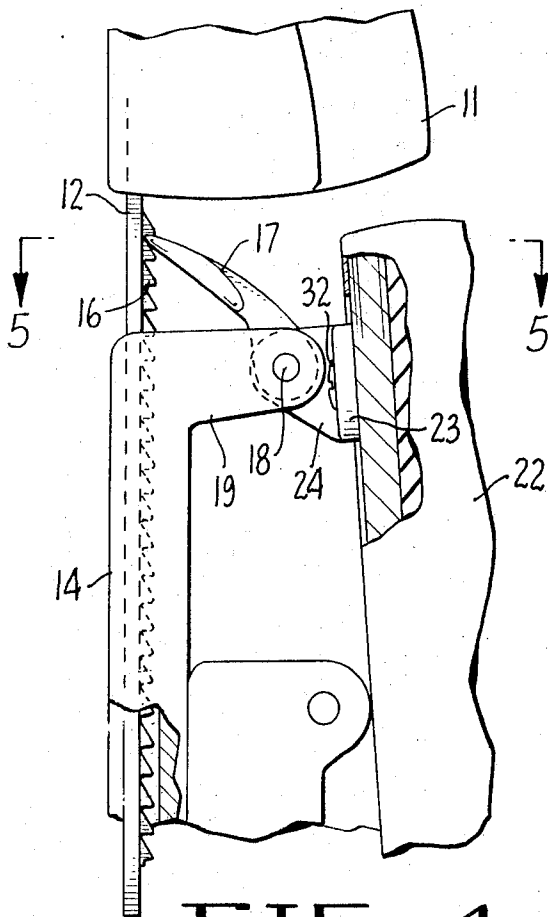


FIG. 4.

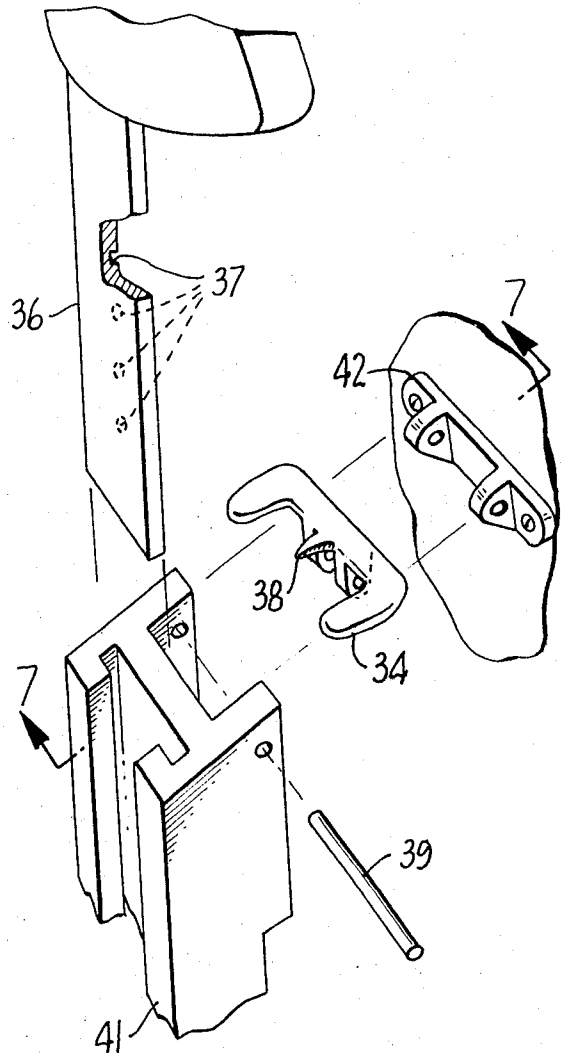


FIG. 6.

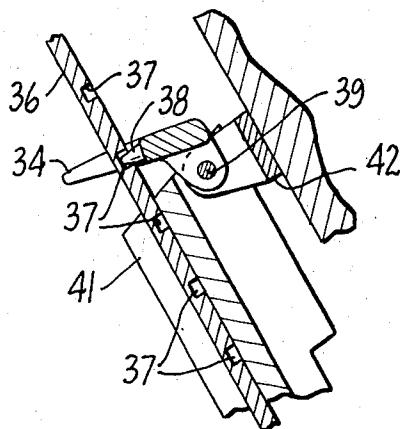


FIG. 7.

SPLIT BACK DENTAL CHAIR APPARATUS**BACKGROUND OF THE INVENTION**

The present invention relates to a SPLIT BACK DENTAL CHAIR APPARATUS, and more particularly to a kit for converting a back of a conventional dental chair to a split back configuration.

Conventional dental chairs such as the kind manufactured by the Ritter and Weber Companies, are characteristically formed with a single back and a bifurcated or curved pad head rest supported on a linkage mechanism which is mounted on a support member for supporting the back of the chair. Such devices also have been used for prosthetic operations. The linkage mechanisms of such chairs and their bifurcated or curved pad head supports make it difficult for the dentist to hold the patient's head above his lap so he can sit down while operating on the patient. This difficulty mainly is due to the thickness of the profile of the back of the chair caused by the rearward extension of the linkage mechanism on which the head rest is mounted.

SUMMARY OF THE INVENTION

The split back dental chair apparatus of the present invention provides for a thin profile of the back of the dental chair so that it can be used as a lounge-type chair and the dentist can operate with the patient's head supported just above the dentist's lap, permitting the dentist to sit down while operating on the patient. The present apparatus may be in the form of a kit adapted for conversion of the many existing dental chairs, such as the kind manufactured and sold for many years by the Ritter and Weber Companies, from the conventional upright configuration to the split back lounge configuration.

The present apparatus in effect splits the back of a lounge-type chair to provide a flattened head rest adjustable with respect to the back rest portion to vary the length of the back. The head rest is mounted on an elongated plate proportioned to be slidable through the keyway of the support member mounted on the frame portion of the dental chair which supports the chair back. This apparatus replaces the linkage mechanism and bifurcated or curved pad head support. A latch is pin mounted through the ears already provided on the support member and may be manually rotated to releasably engage the plate and thus permit manual adjustment of the height of the head rest. In one embodiment, the plate has a rack formed thereon and the latch has a projection providing an edge for engaging the rack. In an alternative embodiment, the plate has holes along its length and the latch has a tooth formed for selectively engaging the holes.

The apparatus is particularly adaptable to backs of dental chairs of the type manufactured by the Ritter and Weber Companies. Such chairs characteristically provide a support member mounted on the seat frame of the dental chair and formed for supporting the back of the chairs and adjustably supporting the bifurcated or curved pad head support assembly. The support member on such a chair is formed with a keyway in which the mechanical linkage which provides swinging adjustment of the conventional head support is mounted. In the present invention, the mechanical linkage assembly is eliminated and is replaced in the keyway by the plate on which the split back head rest is mounted. The described chairs conventionally include

a strut which is pin mounted on the support member to hold the back of the seat. In the present device, this strut is eliminated and the back of the seat is pin connected to the support member by a bracket having ears through which the pin is connected. The latch is pivot mounted on the same pin connection.

Accordingly, an object of the present invention is to provide a thin profile split back dental chair apparatus.

Another object is to provide a kit for converting a conventional dental chair back to a thin profile split back configuration.

A further object of the invention is the provision of a head rest of a dental chair with a plate mounted on the head rest and adjustably slidable through the keyway of the back support of the dental chair.

Still another object is the provision in apparatus of the character described of a latch which is pin mounted on the back support of a split back dental chair and has a projection formed for selectively engaging the teeth of a rack formed on a plate which supports the head rest portion of the split back.

Yet another object of the present invention is the provision in apparatus of the character described of a latch which is pivotally mounted on the back support member of a split back dental chair and has a tooth formed for selectively engaging spaced holes in an elongated plate which holds the head rest portion of the split back.

Further objects and advantages of the present invention will become apparent as the specification proceeds, and the new and useful features thereof will be fully defined in the claims attached hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred forms of the present invention are illustrated in the accompanying drawings, forming part of this specification, in which:

FIG. 1 is a perspective view of the split back dental chair apparatus of the present invention in exploded orientation and with a conventional swingable head support and linkage shown in phantom lines;

FIG. 2 is a side elevational view of the back portion of the apparatus of the present invention, showing the thin profile achieved thereby;

FIG. 3 is a frontal view of the split back dental chair configuration;

FIG. 4 is a fragmentary side elevational view on an enlarged scale of the connecting latch and rack mechanism with portions broken away and shown in section for clarity of illustration.

FIG. 5 is a plan sectional view taken substantially along the plane of line 5-5 of FIG. 4;

FIG. 6 is exploded fragmentary perspective view of an alternative embodiment of the split back chair of the present invention with a tooth and hole latch configuration; and

FIG. 7 is a sectional view taken substantially along the plane of line 7-7 of FIG. 6, but showing the parts in assembled relation.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, there is shown a dental chair 10 having a head rest 11 mounted on an elongated plate 12 formed to slide in a keyway 13 of a back support member 14. The plate 12 has a rack 16 formed thereon which is engagable in ratchet fashion by a latch

17. The latch 17 is mounted on a pin 18 which in turn is mounted through ears 19 and 21 on the support member 14. The back 22 of the seat has a bracket 23 with ears 24 and 26 formed thereon. The back 22 is secured to the back support member 14 by the connection of pin 18 through the ears 19 and 21 of member 14 as well as ears 24 and 26 of bracket 23.

The split back dental chair apparatus shown in FIG. 1 is particularly adaptable to dental chairs manufactured by the Ritter and Weber Companies, and copies thereof, with the conventional swingable head support apparatus being shown in phantom. The conventional apparatus comprises single or dual head support pads 27 swingably mounted on the back support member 14 by linkages 28 and 29, and the conventional back 22 is secured to the back support member by a strut 31 in the conventional apparatus.

The present invention is easily adaptable to such dental chairs by elimination of the head rest 27, the linkages 28 and 29 and the strut 31. The bracket 23 is secured to the back 22 by screws 32 and 33 as shown in FIG. 5. The bracket 23 is then connected to the back support 14 by the coupling of pin 18 through the ears 19 and 21 of the back support 14 as well as ears 24 and 26 of the bracket 23.

The latch 17 is manually engagable with the rack 16, as shown in greater detail in FIG. 4, to maintain the head rest 11 at a desired height. The height of the head rest 11 may be altered as shown in phantom in FIG. 2 by simply lifting the plate 12 and manually disengaging the latch 17 and readjusting the height of the head rest. The back is thereby split as shown in the frontal view in FIG. 3. The thin profile of the back as shown in FIG. 2 enables the dentist to work conveniently with the patient's head above the dentist's lap and to sit down while treating the patient.

In an alternative embodiment shown in FIGS. 6 and 7, a plate 36 is formed with holes 37 thereon and a latch 34 is formed with a tooth 38 for engaging the holes 37 in mating configuration. The latch 34 is mounted on a pin 39 which also couples a support member 41 to a bracket 42 to secure the back of the

seat to the support member 41. The head rest may be raised and lowered by manually rotating the latch 34 clockwise to disengage the tooth 38 from one of the holes 37. The height of the head rest may then be manually adjusted by sliding the plate 36 to the desired position and rotating the latch 34 counter-clockwise to engage the tooth 38 in a different one of the holes 37.

Obviously many modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention can be practiced otherwise than as specifically described.

I claim:

1. A thin profile split back conversion for a dental chair having a keyway in its frame for slidably supporting an articulated headrest and a pin mount for pivotally supporting a backrest, comprising

an elongated back support member formed for slidable mounting in the chair frame keyway and having a headrest keyway formed therein and pin mounting means at the upper end thereof, a thin profile backrest pivotally mounted on said pin mounting means on said back support member, a thin profile headrest having an elongated tongue slidable in said keyway in said support member, and securing means on said support member and said tongue formed for adjustably retaining said headrest in desired position relative to said backrest.

2. Apparatus as described in claim 1 and wherein said securing means comprises a latch member pivotally mounted on said pin mounting means on said back support member, and a series of detents on said tongue cooperative with said latch member.

3. Apparatus as described in claim 2 and wherein said series of detents comprises a toothed rack mounted on said tongue in confronting relation to said pin mounting means on said support member.

4. Apparatus as described in claim 2 and wherein said series of detents comprises a row of openings formed along said tongue for selective engagement by said latch member.

* * * * *

45

50

55

60

65