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SELF-STORING KNEE REST FOR MEDICAL EXAMINATION TABLE AND THE LIKE

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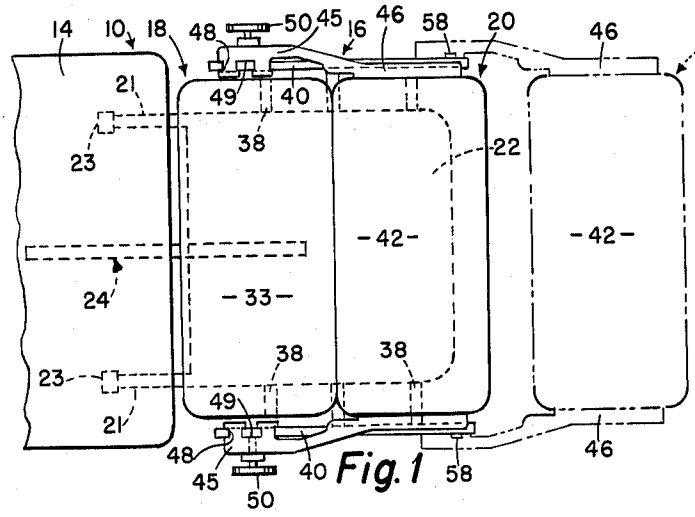

Fig. 1

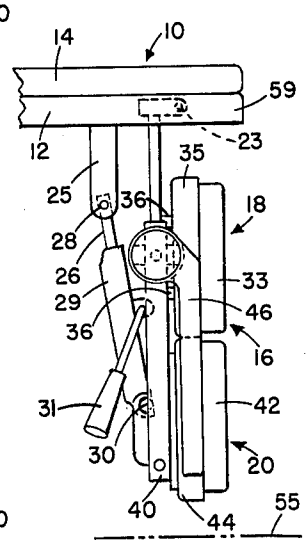

Fig. 2

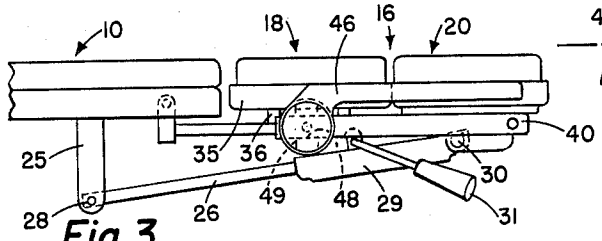

Fig. 3

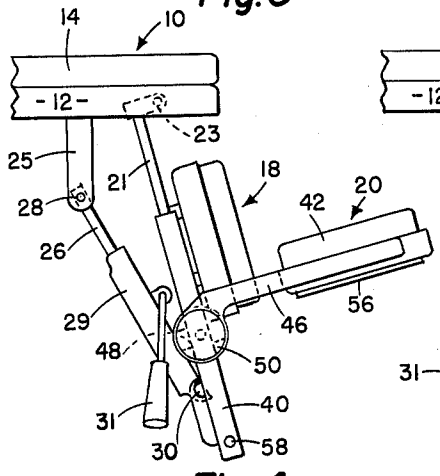

Fig. 4

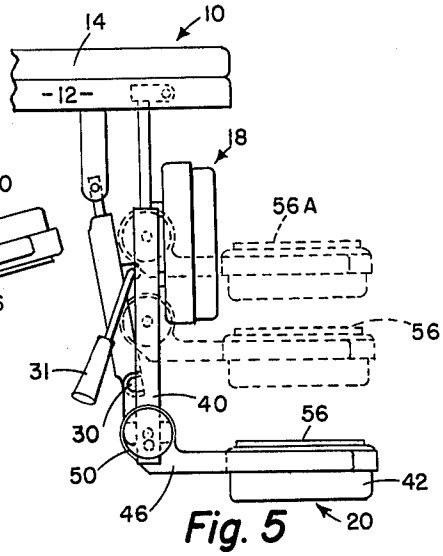

Fig. 5

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SELF-STORING KNEE REST FOR MEDICAL EXAMINATION TABLE AND THE LIKE

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This invention relates to a self-storing knee rest section for a medical examination table or the like.

One object of our invention is to provide a self-storing knee rest section for a medical examination table or the like which, in a stored position, constitutes a part of the leg rest section of a table of this nature.

Therefore, it is a significant object of our invention to provide a knee rest which may be conveniently stored in a usable position, as part of the table with which it is used.

A further object of our invention is the provision of a self-storing knee rest which is adaptable for forming a part of the leg rest section of a medical examination table or the like when in a stored position, and may be telescoped to vary the length of the leg rest section.

Another object of our invention is to provide a knee rest, which when stored forms a part of the leg section of a medical table, so that when the leg rest section is articulated, with respect to the seat rest section of the table, to a substantially vertical position there is no interference with the floor of the doctor's examining office or the medical room in which the table is otherwise used.

It is a further object of our invention to provide a reversible knee rest having a knee rest surface and a foot rest table surface adjustable longitudinally of the leg rest section thereby to provide, in the alternative, a knee rest or a foot rest or table for the doctor's use, adjustable to a selected position relative to the seat rest section of the table.

Other objects and advantages of this invention will be particularly set forth in the claims and will be apparent from the following description, when taken in connection with the accompanying drawings, in which:

FIG. 1 is a top planar view of one embodiment of our invention and illustrated in broken line at the alternative position;

FIG. 2 is a side elevational view of the embodiment of our invention illustrated in FIG. 1 with the leg rest section, including the knee rest section in the stored position, articulated substantially 90° from the position illustrated in FIG. 1;

FIG. 3 is a side elevational view of the embodiment of our invention illustrated in FIG. 1; and

FIGS. 4 and 5 are side elevational views of the embodiment of our invention illustrated in FIG. 1 with parts shown in some of the alternative positions in which our invention may selectively be adjusted.

As characterized herein, we have described our invention for use with a medical examination table or the like. This particular invention is particularly well suited for use by proctologists in their examination and minor surgical uses. However, it will be understood that the concept of our invention may be incorporated in any medical table including operating tables. Moreover, this invention is adaptable for use with chairs, such as dental chairs, as well as tables.

In order to more specifically characterize the nature of our invention, we have not illustrated nor attempted to describe the details of any particular medical table with which our invention is adapted for use. However, it will be understood that with reference to the drawings, a seat rest section generally indicated by the numeral **10** may be rigidly mounted on an upright pedestal (not shown)

or may be pivotally mounted on an upright pedestal for articulation relative thereto and to one or more other table sections as desired.

The seat rest section **10** comprises a rigid frame or sub-structure **12** supporting a resilient pad **14**, cushioning the seat or buttocks of the patient.

Our invention resides in the novel leg rest section generally indicated by the numeral **16**, comprising a partial leg rest section, generally indicated by the numeral **18**, and a knee rest section, generally indicated by the numeral **20**. A leg rest section frame or sub-structure **22** (FIG. 1) has two laterally spaced arms **21** (FIG. 1) pivotally mounted at **23** to the seat-section frame **12**.

The leg rest section **16** may be articulated with respect to the seat rest section **10** by means of a linkage, generally indicated by the numeral **24**. Linkage **24** includes a depending arm **25** rigidly mounted on the lower side of frame **12**, a male connecting arm **26** pivotally connected at **28** to depending arm **25** and telescopically received by a female connecting arm **29**, in turn pivotally connected at **30** to the leg rest section frame **22**.

Linkage **24** includes a locking mechanism (not shown) for releasably locking the leg rest section **16** in selectively adjusted positions relative to the seat rest section **10**, the details of which locking mechanism we have not described since it is not essential to the concept of our invention; the locking mechanism (not shown) includes a manually operative handle **31**.

The manually operative handle **31**, illustrated in all views in a locked position, is pivoted in a clockwise direction to an unlocked position. It will be understood that the manually operative handle **31** controls a releasable locking means between the male connecting arm **26** and the female connecting arm **29** for locking the leg rest section **16** in any selected adjusted position, intermediate an upright position shown in FIGS. 1 and 3 and a perpendicular or vertical position illustrated in FIG. 2. The manually operative linkage **24** could be replaced by a hydraulically operated linkage or other automatic linkage for articulating the leg rest section **16** relative to the seat section **10**. It will be further understood by those skilled in the art that any one of a number of known releasable locking mechanisms could be utilized to accomplish this end.

The partial leg rest section **18** comprises a resilient cushion **33** attached to a frame or shell **35** in turn rigidly connected, as for example by longitudinally spaced laterally extending support elements **36**, to the leg rest section frame **22**.

Leg rest section frame **22** carries a plurality of longitudinally spaced laterally extending support extensions **38** (FIG. 1) on opposite sides thereof, carrying at their outer extremity longitudinally extending rails **40**.

The knee rest section **20** comprises a resilient pad **42** attached to a frame or shell **44**. We provide a pair of rail adaptors **46** rigidly mounted on opposite sides to the frame **44** of the knee rest section **20** in laterally spaced relationship. Each rail adaptor **46** has an enlarged portion **45** at its outer extremity. Enlarged portions **45** are each provided with a pair of milled "T"-slots **48** and **49** intersecting each other at substantially 90° angles. Each of the slots **48** and **49** are constructed to slidably receive rails **40**. Each of the enlarged portions **45** of rail adaptors **46** are provided with transverse threaded holes (not shown) at the intersection of slots **48** and **49**. Each of these threaded holes (not shown) receive threaded locking screws **50** manually operative to releasably lock the knee rest section **20** in any selected position longitudinally of the rail **40**, from a substantially abutting position with relation to partial leg rest section **18** (solid line in FIGS. 1–3) to an extended position (broken line in FIG. 1).

This construction provides means for telescoping the

knee rest section **20** to vary the length of the leg rest section **16**. This is a desirable feature of our invention because of varying heights of patients and varying purposes for which the table may be used.

Heretofore, doctors have been faced with the awkward arrangement of a removable knee rest similar to the one generally indicated by the numeral **20**; however, prior knee rests were not self storing, and presented the annoying problem of storage someplace in the examination or operating room.

While known knee rests have been adapted to form an extension of known leg rest sections, when the seat rest section was in a horizontal position, it was heretofore necessary to remove the knee rest section from the leg rest section prior to articulation of the leg rest section to the FIG. 2 position; otherwise the leg rest section would strike the floor, illustrated by the broken line **55** of FIG. 2.

With our invention, the doctor simply slides the knee rest section from the extended position, shown in broken lines in FIG. 1, to the abutting position shown in solid lines prior to articulating the leg rest section **16** to the FIG. 2 position.

Moreover, with the prior constructions it was not possible to have the infinite variations in length of the leg rest section **16** now available to the doctor by the telescopic construction of the partial leg rest section **18** and knee rest section **20**.

When the rest section **20** lies in the same plane as the partial leg rest section **18**, thereby forming an integral part of the variable length leg rest section **16**, the laterally spaced rails **40** are received by milled T slots **48**. When it is desired that the patient assume a kneeling position, the rails **40** are received in milled T slots **49** and the knee rest section **20** is supported in a lateral or perpendicular position relative to the partial leg rest section **18** as illustrated in FIG. 4. It will be understood that, depending upon the desired position and the heights of the patients, the knee rest section **20** is adjustable longitudinally of the rails **40** to any desired position.

With reference to FIG. 5, we have shown the knee rest section reversed 180° so that a hard foot rest surface or table surface **56** is upright and the resilient knee cushion **42** is inverted. Thus, when the doctor wants the patient to assume an elevated standing position or wants to provide a step to aid the patient in assuming a sitting position on the edge of the seat section **10**, the knee rest section **20** is locked in any selected position longitudinally of the rails **40** with the foot rest surface **56** upwardly disposed.

When in an upper-most position illustrated at **56**–A the hard surface **56** of the knee rest section may serve as an instrument table for the doctor or nurse when either standing, working on the patient or seated. When the doctor is seated, his knees may be received below the knee rest section **20**.

We have provided a pair of safety stops **58** laterally extending from the outer extremity of the rails **40**, thereby to prevent inadvertant or accidental dislodgement of the knee rest sectioin during adjustment thereof along the rails **40**. It will be understood that for removal of the knee rest section **20** from the rails **40**, it is necessary to back off both of the locking screws **50** a sufficient distance to pass over the safety stops **58**.

It will be noted that the pivotal connection at **23**, intermediate the leg rest section **16** and seat section **10**, is spaced from the adjacent or abutting edge **59** of the seat rest section **10**, thereby enabling the leg rest section **16** to be retracted behind the edge **59** of the seat rest section **10** when articulated to the FIG. 2 position. This permits the doctor greater access to the patient.

While we have shown and described the preferred form of mechanism of our invention, it will be apparent that various modifications and changes may be made therein, particularly in the form and relation of parts, without departing from the spirit of our invention as set forth in the appended claims.

We claim:

1. In a medical examination table construction or the like, an improvement comprising,
(a) a partial leg rest section,
(b) a knee rest section, and
(c) means for releasably locking said sections together to form an extendable leg rest section, said means including means for extendably mounting said knee rest section on said partial leg rest section to vary the length of said leg rest section.

2. In a medical examination table construction or the like, an improvement comprising,
(a) a partial leg rest section,
(b) a knee rest section, and
(c) means for releasably locking said knee rest section in substantially abutting planar relationship with said partial leg rest section to form a leg rest section, said means including means for slidably mounting said knee rest section on said partial leg rest section to vary the length of said leg rest section.

3. A table construction in accordance with claim **2** in which,
(d) said slidable mounting means includes means for telescoping said knee rest section.

4. A table construction in accordance with claim **3** in which,
(e) said telescoping means comprises a pair of rails carried by said partial leg rest section and releasable locking means on said knee rest section for slidably mounting said knee rest section on said rails.

5. A table construction in accordance with claim **2** in which,
(d) said knee rest section has a knee rest surface and a foot rest surface, and
(e) said releasable locking means includes means for releasably locking said knee rest section on said partial leg rest section selectively with one of said surfaces being substantially lateral to said partial leg rest section and cooperative therewith to receive the knees or feet of patients respectively.

6. In a medical examination table construction or the like, having a seat rest section, an improvement comprising,
(a) a partial leg rest section,
(b) means for articulating said partial leg rest section relative to said seat rest section,
(c) a knee rest section,
(d) means for telescoping said knee rest section on said partial leg rest section to form a variable length leg rest section, and
(e) said telescoping means including means for mounting said knee rest section substantially laterally on said partial leg rest section.

7. In a medical examination table construction or the like, having a seat rest section, an improvement comprising,
(a) a partial leg rest section,
(b) means for articulating said partial leg rest section relative to said seat section,
(c) a knee rest section,
(d) means for telescoping said knee rest section on said partial leg rest section to form a variable length leg rest section, and
(e) said telescoping means including means for mounting said knee rest section substantially laterally on said partial leg rest section, said telescoping means providing selective adjustment of said laterally mounted knee rest longitudinally of said partial leg rest section for receiving the knees of a patient relative to said seat section.

8. A table construction in accordance with claim **7** in which,
(f) said lateral mounting means includes means for

reversing said knee rest section laterally with respect to said partial leg rest section to provide a foot surface, and

(g) said telescoping means and lateral mounting means includes selective adjustment of said laterally mounted knee rest section between a table position and a foot receiving position.

9. In a medical examination table construction or the like, an improvement comprising,

(a) a partial leg rest section,

(b) a knee rest section, and

(c) means for releasably locking said sections together to form a leg rest section said means including

means for telescoping said knee rest section on said partial leg rest section to vary the length of said leg rest section.

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