July 4, 1967 H. R. KLEINMAN 3,329,423

SAFETY RAIL FOR EXAMINATION TABLES

Filed Aug. 14, 1964 2 Sheets-Sheet 1

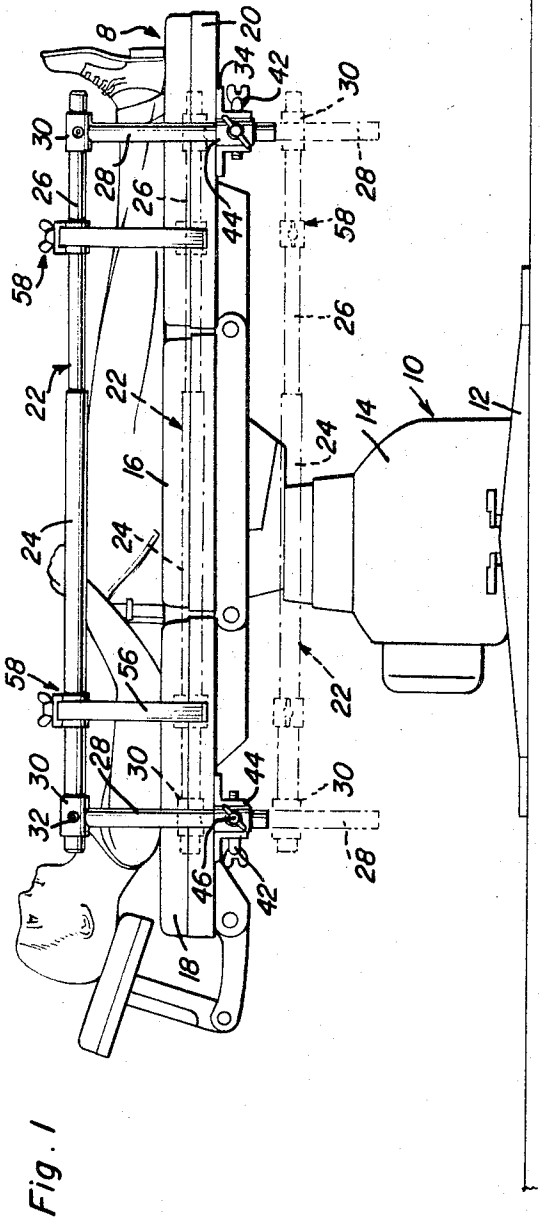


Fig. 1

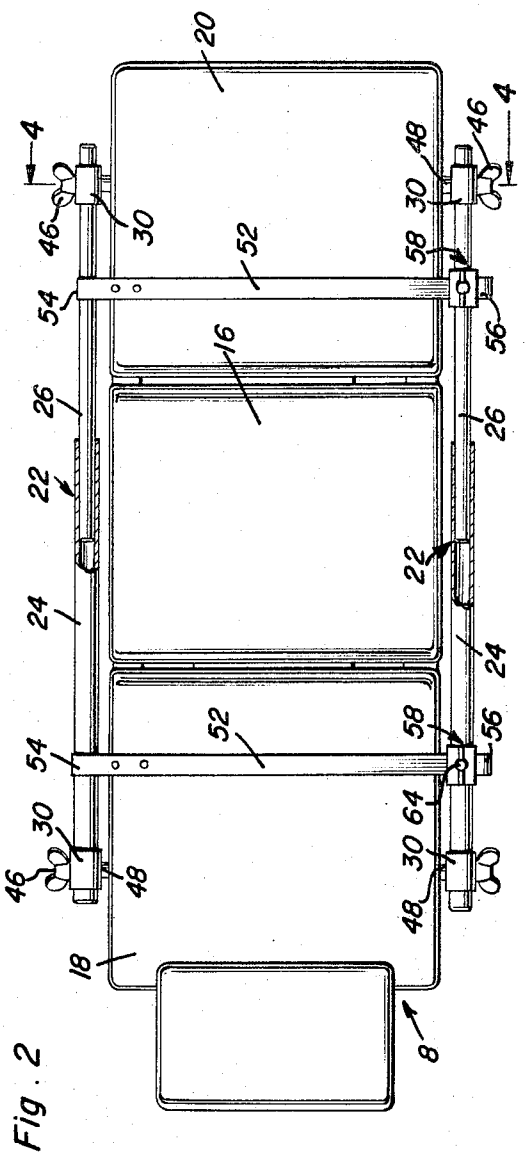


Fig. 2

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SAFETY RAIL FOR EXAMINATION TABLES

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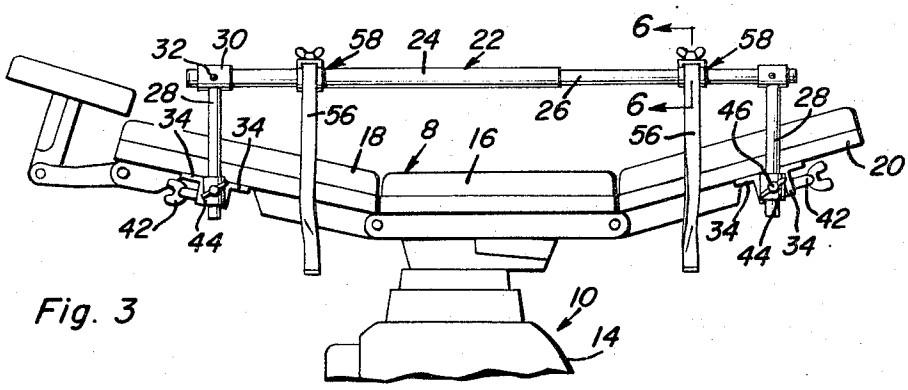


Fig. 3

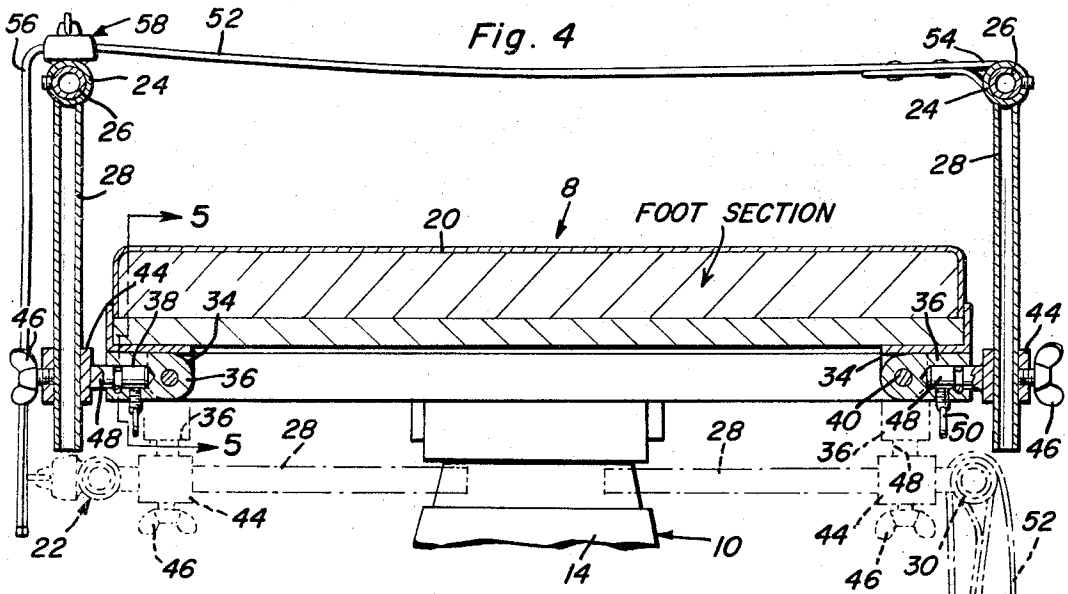


Fig. 4

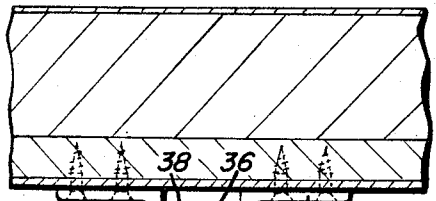


Fig. 5

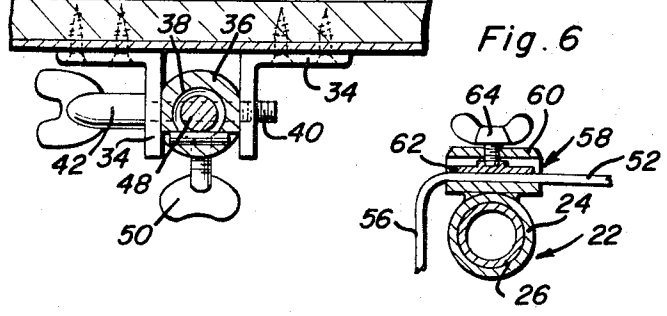


Fig. 6

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United States Patent Office 3,329,423
Patented July 4, 1967

3,329,423

SAFETY RAIL FOR EXAMINATION TABLES

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Filed Aug. 14, 1964, Ser. No. 389,605
8 Claims. (Cl. 269—324)

This invention relates to improved safety-type guards which are functionally designed and structurally adapted to be installed singly or conjointly, along the lengthwise sides of a physician's examining table and which when in use minimize the likelihood of a patient falling and subjecting himself to injury.

More specifically, the herein disclosed invention is expressly constructed to provide adequate and practical protection to a patient while undergoing a physical examination, particularly a patient in shock, accident victims, cardiacs, diabetics, handicapped persons, helpless senior citizens, or heavily sedated patients lying on the table awaiting attention and medical aid.

The present invention, generally speaking, lends itself to efficient adaptability of use in a doctor's office, clinic, hospital or institution where it may be needed. Primarily, however, and though suitably applicable to beds, patient transfer cots and the like, it is best suited for effectual use on one or both sides of a physician's examination table of a type embodying joined sections; namely, a central body section and complemental relatively adjustable and variable head and foot sections.

As will be hereinafter more evident the invention has to do with an attachment (or attachments) which lends itself to feasible and acceptable use on a conventional-type examination table and which is characterized, broadly stated, by an elongated elevated safety rail which is mounted so that it remains in a satisfactory generally horizontal position regardless of the elevated positions of the head and foot sections on the table.

Briefly the invention pertains to a patient reclining and supporting table embodying a central body section and relatively adjustable head and foot sections and the combination therewith of at least one elongated safety rail. This rail is commensurate in length with the length of the overall table and is disposed, when in use, in a substantially horizontal plane above the plane of the patient and constantly assumes this given plane irrespective of the variable angulated and set positions of the head and foot sections relative to the central body section, and self-adjusting and suitably articulated adapting means mounted at end portions of the rail and uniquely bracketed or otherwise appropriately connected to the respectively associated head and foot sections.

In carrying out a preferred embodiment of the invention the rail is adjustable longitudinally and is preferably made up of telescopically connected tubular members. The end portions of the rail are provided with depending normally vertical supporting posts. The aforementioned articulated self-adjusting and adapting means is characterized by swivelly mounted adapters which in turn are hingedly bracketed on median bottom portions of the head and foot sections of the table.

The safety rail is supported at the desired horizontal elevated position by attached depending end posts. These posts are slidably and removably connected with the swivelly mounted adapters. Each adapter is characterized by a sleeve and the associated end portion of the post is slidably and removably fitted in the bore of the sleeve. The adapters in turn are mounted on brackets which are hingedly and clampingly anchored on simple paired angle cleats or clips fastened underneath the median frame portions of the head and foot sections. Accordingly, the rail and companion posts provide an inverted U-shaped guard. This guard is normally in an upstanding safety

position. However, it can be lowered to a horizontal plane below the top of the table and, in addition, can be bodily swung through an arcuate path to assume an out-of-the-way stored or folded position when it is not intended to be used.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in side elevation showing a conventional type physician's examination table, a patient reclining thereon with the sections coplanar and, what is more important, the improved safety guard or rail and its full line and dotted line positions;

FIGURE 2 is a top plan view showing the forward and rearward holddown or restraining straps;

FIGURE 3 is a view also in side elevation and similar to FIG. 1 and which illustrates the head and foot sections tilted or inclined upwardly and the manner in which the safety rail remains horizontal by reason of the articulated joints between the post supporting adapters and associated hinged bracket means;

FIGURE 4 is an enlarged view with parts in section and elevation taken on the plane of the section line **4—4** of FIGURE 2 and which shows the parts in use in full lines and stored away in phantom lines;

FIGURE 5 is an enlarged detail sectional and elevational view taken on the line **5—5** of FIGURE 4; and

FIGURE 6 is a similar detail section taken on the line **6—6** of FIGURE 3.

With reference now to FIGS. 1 and 3 it will be evident that the examination table is denoted generally by the numeral **8**. It is of a conventional type and is supported atop a pedestal or stand denoted generally at **10** and embodying a stationary base **12** and a standard **14**. The central or body section of the patient supporting table is denoted at **16**, the head section at **18** and the foot section at **20**. These sections are of regular construction and hingedly or otherwise linked and joined together so that they may be adjusted from a coplanar relationship to the variable angular relative relationship illustrated in FIG. 3.

It will be understood that the guards or rails can be used singly or collectively. There are instances where the table is close to a wall and only one guard is required; in other instances, both guards in parallel relationship are needed. For simplicity of description but a single rail or guard unit will be described. To this end the normally horizontal rail is denoted generally by the numeral **22**. It is preferably constructed from a pair of telescopically connected aluminum longitudinally extensible and retractible tubes or tubular members **24** and **26**. It should be noted that the principal parts can be of stainless steel or perhaps of a suitable grade of commercial plastics. In any event the adjustable rail **22** is substantially commensurate in length with the longitudinal side of the table on which it is mounted. The end portions of the rail are provided with appropriate struts, more specifically, tubular posts **28**. These forward and rearward posts are the same in construction and a description of one will suffice for both. The upper end of the post is provided with a sleeve or the like **30** which is fitted over the end of the rail and fastened appropriately in place as at **32**. Thus the two posts **28** at the respective ends in conjunction with the rail **22** provide an elongated inverted U-shaped patient guard.

The median bottom portion of the frame of the hinged table section (either head or foot section) is provided with a pair of angle shaped clips or cleats denoted generally at **34** (FIG. 5). The spaced parallel flange portions

of these cleats serve to accommodate and support a block-like bracket **36** having an axial socket **38** (FIG. 4) opening through the outer end thereof. This bracket **36** is hingedly mounted on the journal portion of an attaching bolt having a screw-threaded end **40** and a handgrip **42** at the opposite end. With this construction it will be evident that the bracket is both hingedly an clampingly mounted. By tightening the hinge bolt or pivot the depending flanges are frictionally engaged with diametrically opposite sides of the bracket whereby to hold it in either the full line horizontal position shown in FIG. 4 or the depending vertical out-of-the-way position shown in phantom lines in FIG. 4. This socketed hinged bracket serves to accommodate the self-adapting or self-adjusting adapter. This adapter as best shown in FIG. 4 comprises a normally vertical sleeve **44** into whose bore the cooperating portion of the post is slidingly, detachably, and clampingly mounted. The sleeve is provided with a setscrew **46** by way of which the leg or post **28** is fastened in place. The sleeve is provided with a lateral stud or shank **48** which is grooved and telescopically and swivelly pinned in the socket **38**. The bracket is provided with a setscrew **50** which is releasably engageable with the stud to retain it in a given or an adjusted position. When the setscrew **50** is loose the stud and consequently the sleeve of the adapter can be adjusted to assume the position and relationship illustrated in FIG. 1 on the one hand and in FIG. 3 on the other hand. This adjustment automatically serves to permit the upstanding or supported rail to remain in a constantly horizontal position notwithstanding the angled adjustment of the head and foot sections, as is evident in FIG. 3.

One or two holddown straps may be provided. Each strap is the same in construction. The strap, of suitable material, is denoted by the numeral **52** and has one end portion looped and fastened in place on the cooperating rail as is evident in full and phantom lines in FIG. 4. The other or free end portion **56** is adjustably and separably connectible with the clamp means **58** mounted atop the safety rail. As shown in FIG. 6 this clamp comprises a sleeve **60** through which the strap end passes and is clampingly held by a plate **62** which in turn is fittingly clamped in place by a swivelly associated setscrew **64**. These holddown straps have been found to be particularly applicable and adaptable in cases where the patient is in a coma, heavily sedated, in shock, or cantankerous as the case may be.

It will be evident that the guard means or safety rail is light in weight and easily operated. The rails may be used singly or paired if so desired. Moreover by loosening the setscrews **46** on the adapter sleeves **44** the depending legs or posts **28** can be lifted up, withdrawn and the entire guard bodily removed and placed aside. As a matter of fact and with this construction the posts when the setscrews **46** are loosened can be dropped down until the headed upper ends thereof rest atop the sleeves as shown in dotted lines in FIG. 1. This may be a temporary out-of-the-way position if desired. Normally, however, the structure is dropped down to the dotted line position shown above in FIG. 1 and then the entire structure is folded or swung beneath the bottom of the table sections to assume the horizontal completely out-of-the-way position illustrated in phantom lines in FIG. 4. In this position the clamping and pivot bolts **42** can be tightened to force the cleats **34** against the hinge brackets **36** to hold the brackets in the then depending or vertical dotted line position shown.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination, a patient reclining and supporting table embodying a central body section and relatively adjustable head and foot sections, an elongated safety rail commensurate in length with the length of the overall table and disposed in a substantially horizontal plane above the patient and constantly assuming said horizontal plane regardless of the variable angular elevated and adjusted positions of the head and foot sections relative to the central body section, and self-adjusting and adapting means mounting the end portions of said rail on said head and foot sections.

2. The structure according to claim **1**, and wherein said rail is adjustable longitudinally and is provided at its respective ends with depending normally vertical supporting posts.

3. The structure defined in claim **2**, and wherein said self-adjusting and adapting means embodies swivelly mounted adapters hingedly bracketed on said head and foot sections.

4. In combination, a patient reclining and supporting table embodying a central body section and relatively adjustable head and foot sections, an elongated safety rail commensurate in length with the length of the overall table and disposed in a substantially horizontal plane above the patient and constantly assuming said horizontal plane regardless of the variable angular elevated and adjusted positions of the head and foot sections relative to the central body section, said rail embodying telescopically connected longitudinally adjustable tubes, a first depending end post connected at an upper end to a rearward end portion of said rail and adjustably detachably anchored at its lower end on a median marginal side portion of said foot section, a second end post lateral to and connected at its upper end to a forward end portion of said rail, a bracket hingedly mounted on an underneath part of the median side portion of said head section, said bracket having an axial socket opening outwardly, an adapter comprising a sleeve having a projecting stud telescoping rotatively into said socket, the lower end of said second post being fitted removably and slidingly in the bore of said sleeve and held in place by a setscrew carried by said sleeve.

5. The structure defined in claim **4**, and wherein said bracket is hingedly and clampingly mounted between a pair of fixed mounting cleats, said bracket having a setscrew retentively engageable with said stud.

6. In combination, a patient reclining and supporting table embodying a central body section and relatively adjustable head and foot sections, an elongated safety rail commensurate in length with the length of the overall table and disposed in a substantially horizontal plane above the patient and constantly assuming said horizontal plane regardless of the variable angular elevated and adjusted positions of the head and foot sections relative to the central body section, said rail being longitudinally adjustable and provided at its respective end portions with lateral depending posts, spaced parallel angle-cleats affixed to an underneath median side portion of the respective head and foot sections, brackets hingedly and clampingly mounted between their respective cleats, each bracket having an outwardly opening axial socket, an adapter for each bracket, each adapter comprising a sleeve having a laterally projecting stud swivelly mounted in the socket provided thereof, each bracket provided with a setscrew releasably engaging the coacting post, the lower ends of said posts being aligned with and fitting slidingly and removably in the bores of their respectively cooperable sleeves, said sleeves carrying setscrews releasably engaging said posts.

7. In combination, a physician's examination table for a reclining patient; a single rail, end posts connected at like ends to the respective end portions of said rail and at right angles thereto, means hingedly bracketing said posts to a relatively stationary component of said table,

said rail and complemental posts constituting and providing a substantially U-shapen safety-type patient guard, said bracketing and hinging means permitting the guard, as a unit, to be moved from an upstanding vertical in-use position to an out-of-use horizontal position wholly beneath and generally parallel with a bottom side of said table, and post-end clamping means cooperable with said bracketing and hinging means for positively securing said guard in its selected (A) in-use and (B) out-of-use positions, said posts being slidingly as well as detachably connected with said bracketing means, whereby said guard is capable of being raised and lowered and, where desired, completely detached and stored, said bracketing means embodying outstanding swivelly mounted adapters with which said posts are slidingly and detachably connected.

8. A safety-type guard of the class described comprising an attachment embodying an elongated rail, end posts connected at upper ends to the respective end portions of

said rail and disposed at right angles thereto, adapters with which said posts are detachably connected, mounting cleats adapted to be fixed on a relatively stationary support surface, and brackets hingedly joined to their respective cleats, said adapters being operatively carried by their respectively cooperating brackets, said rail comprising a pair of telescopically adjoined tubes, and each adapter comprising a sleeve which is swivelly connected to its associated cooperable hinged bracket.

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