May 28, 1963 M. P. MADSEN 3,091,286

REMOTELY CONTROLLED SICK BED CURTAINS

Filed Aug. 8, 1962

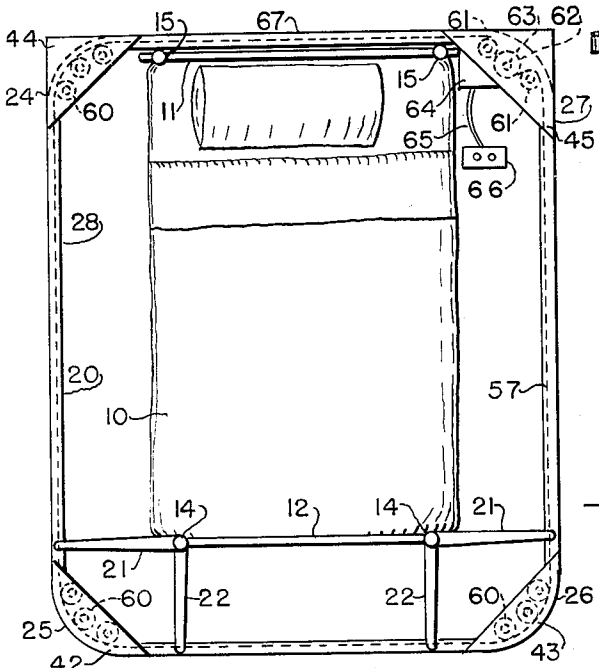



FIG. 1

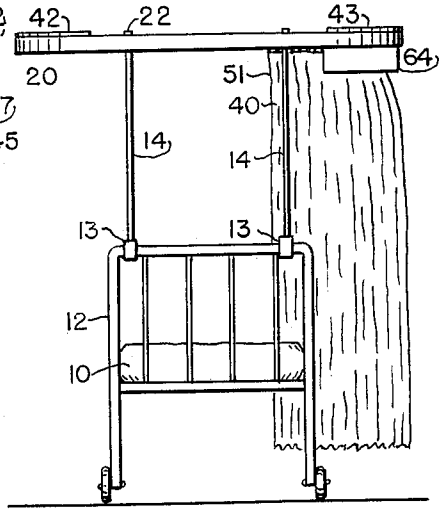



FIG. 2

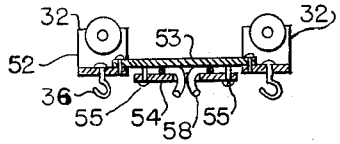



FIG. 3

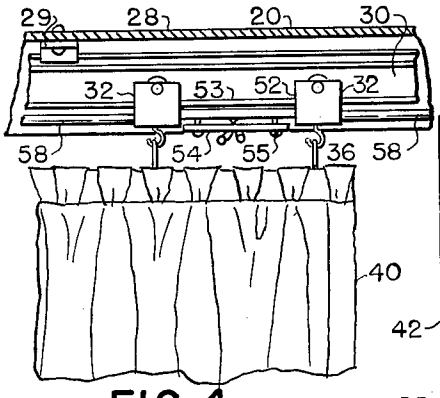



FIG. 4

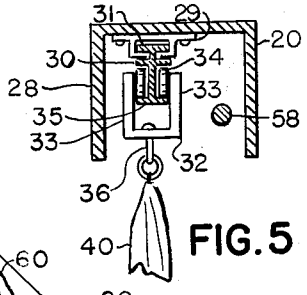



FIG. 5




FIG. 6

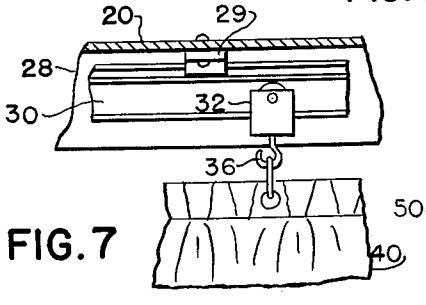



FIG. 7

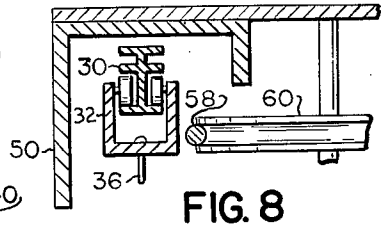



FIG. 8

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# REMOTELY CONTROLLED SICK BED CURTAINS

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This invention relates, in general, to new and useful improvements which are used in connection with sick beds in private homes or in hospitals, and, more particularly, this invention relates to a remotely controlled sick bed curtain.

Hospital beds, particularly in hospitals, are generally surrounded or enclosed by curtains which may be drawn when privacy is wanted or examinations of the patient are to be performed by doctors. The curtains which are now used about sick beds in hospitals can only be drawn closed or opened by nurses or another person, not the patient, who can walk freely about the sick bed.

It is, therefore, an object of this invention to enable a patient who is confined to his sick bed to open or close a curtain adapted to surround his bed without the patient having to summon aid or even move in his bed.

A further object of this invention is to provide a sick bed curtain which may be activated to be opened or closed by the patient's manipulation of a switch or button situated upon his bed or an adjacent night table within easy reach.

Another object of this invention is to provide an apparatus which enables a bedridden patient to control his environment to the extent of opening and closing his sick bed curtain so that the patient's morale is given a lift in that one area, in which he was heretofore helpless, is now placed under his control.

Many other objects, advantages and features of invention reside in the particular construction, arrangement and combination of parts involved in the embodiment of this invention and its practice otherwise as will be understood from the following description and accompanying drawing wherein:

FIGURE 1 is a top view of the bed curtain of my invention shown attached to a hospital bed;

FIGURE 2 is an elevational view showing the foot of a hospital bed with the bed curtain of my invention attached to it with the bed curtain in the open position;

FIGURE 3 is a longitudinal vertical section through the center of the leading edge curtain drawing element;

FIGURE 4 is a vertical section looking inward through a fragment of the curtain track support frame showing a fragment of the curtain track with the drive cord moving the leading edge curtain drive element along the curtain track with a fragment of the leading edge of a curtain shown supported from the leading edge curtain drive element;

FIGURE 5 is a transverse vertical section through the curtain track support frame, the curtain track, and a drive cord showing a fragment of a curtain suspended from a curtain support element;

FIGURE 6 is a top view of a broken away corner of the curtain track support frame with a top portion of the curtain track support frame corner broken away to show the arrangement of the drive cord pulleys;

FIGURE 7 is a longitudinal vertical section through a fragment of the curtain track support frame showing a fragment of the curtain track and a curtain support element mounted on the curtain track with a fragment of the curtain supported by the curtain support element; and

FIGURE 8 is a transverse vertical section through a fragment of the corner of the curtain track support frame.

Referring to the drawing in detail, FIGURES 1 and 2 show a conventional hospital type bed **10** having a metal



headboard **11** and a footboard **12**. By means of suitable clamps **13** two vertical support elements **14** are fixed to extend vertically upward from the footboard **12**. Similar vertical support elements **15** are fixed to extend upward from the headboard **11**. A generally rectangular curtain track support frame **20** is supported above and about the bed **10** by the brackets **21** and **22** which extend outward from the tops of the vertical support elements **14** and by the vertical support elements **15** which are directly attached to the curtain track support frame **20**. Since the head of the bed **10** is generally against a wall, the rectangular curtain track support frame **20** extends only slightly behind the headboard **11** while it extends for a considerable distance past the footboard **12**. This allows an examining physician or other visitor to move about the sick bed **10** with complete privacy within the curtain when it is closed.

Between the corners **24**, **25**, **26** and **27** of the support frame **20**, there extends the straight channel shaped members **28**. As shown in FIGURE 5, curtain track support brackets **29** are fixed to the top wall of the channel members **28** and secure the top flange **31** of the curtain track **30**.

Curtain support elements **32** each have two upwardly extending side portions **33** which carry the nylon rollers **34** that ride on the lower flange **35** of curtain track **30**. A suitable hook **36** hangs from each curtain support element. The bed curtain **40** is supported by its upper edge at short regular intervals by a number of the curtain support elements **32**.

The corners **25** and **26** have rounded cover plates **42** and **43** fixed over them. The cover plates **44** and **45** are fixed over the corners **24** and **27** and they may be square for aesthetic reasons if the headboard **11** is placed adjacent to a wall.

The curtain track **30** is formed from one piece of extruded material which starts at corner **27** and is bent about corners **24** and **25** and corner **26** in a smooth curve. Curved outer walls **50**, as shown in FIGURE 6, are fixed below the cover plates **42**, **43**, **44** and **45** between the ends of the channel members **28**.

The leading edge **51** of the curtain **40**, as shown in FIGURE 2, is secured to the track **30** by means of a leading edge curtain drive element. As shown in FIGURES 3 and 4, this leading edge curtain drive element **52** consists of two curtain support elements **32** which are pivotally joined to a solid link **53**. A single clamping member **54** containing a central aperture urged upward toward link **53** when the screws **55** are tightened.

Referring again to FIGURE 1, the dotted line **57** indicates the path of a length of drive cord **58** which extends completely about the curtain track support frame. The ends of the cord **58** pass under the link **53** and through the aperture in member **54**. Thus the screws **55** may be tightened to clamp the ends of cord **58** to the leading edge curtain drive element **52**. The element **52** negotiates the curved portion of track **30** with the elements **32** pivoting as do the trucks of a railway carriage.

Referring further to FIGURE 1, three or more pulleys **60** are rotatably mounted within the corners **24**, **25** and **26**. As shown in FIGURES 6 and 8, the pulleys **60** support the drive cord **58** at about the level of the curtain support elements **32** and the drive element **52** which slide along the curtain track **30**.

Referring further to FIGURE 1, corner **27** has two idler pulleys **61** and a centrally located drive pulley **62**. Pulley **62** is mounted on a vertical shaft **63** which extends downward to a suitable gearhead electric motor **64** which is mounted below corner **45**. As shown in FIGURE 1, an electric wire **65** leads from motor **64** to a control box **66**.

This invention operates in the following manner. The

curtain **40** is gathered beneath the channel member **67** above the headboard **11** of the bed **10** in the open position. The curtain in this open position is shown in FIGURE 2. The leading edge **51** of the curtain **40** is supported by a leading edge curtain drive element **52** which is fixed to the drive cord **58** in the manner which has been described. The gearhead motor **64**, which drives pulley **62**, may be activated to rotate in either direction by the control box **66**. The box **66** may have two buttons, one to open and one to close the curtain **40**, or it may have a double throw reversing switch. Thus the manipulation of control box **66** activates motor **64** to drive the drive cord **58** in either direction. If pulley **62** moves the drive cord **58** counter clockwise as shown in FIGURE 1, the drive cord will draw the leading edge of the curtain **40** about the curtain track support frame **20** along the track **30**. In this manner, the bed **10** may be completely enclosed giving the bedridden patient privacy. By reversing the motor **64**, the curtain **40** may be opened.

In order to have the curtain **40** negotiate the corners **24**, **25** and **26** without binding, the curtain support elements **32** must be disposed along the top of curtain **40** so that, preferably, at least three curtain support members **32** are disposed on each curved portion of track **30**. This particular construction enables the curtain to be smoothly drawn completely about the curtain support frame **20**.

However, in drawing the curtain closed, the curtain support members **32** negotiating the curved portions of track **30** will tend to be drawn inward toward the center of the curve. Any binding motion which might then result may be mitigated if, as shown in FIGURE 8, the pulleys **60** are placed so that the drive cord **58** is in close proximity to the inner sides of the elements **32**. In such a case, should the bottom of the curtain support elements **32** cock inward to any extent, the drive cord **58** will assist them about the curved portions of the track **30**.

While I have disclosed my invention in the best form known to me, it will nevertheless be understood that this is purely exemplary and that modifications may be made without departing from the spirit of the invention except as it may be more limited in the appended claims wherein I claim:

1. A remotely controlled bed curtain for sick beds comprising, in combination, a generally rectangular curtain track support frame having rounded corners, means supporting said curtain track support frame above a sick bed, a curtain track having a lower flange disposed completely about and hanging from said curtain track support frame, a curtain having a top portion and a leading edge, curtain support elements fixed at regular intervals along the top portion of said curtain, said curtain support elements having members extend upward on either side of the lower flange of said curtain track and having rollers rotatably mounted inside the upward extending members riding on the lower flange of said curtain track, a leading edge curtain drive element slidably mounted on said track and attached to the upper portion of the leading edge of said curtain, outwardly facing pulleys disposed at the corners of said curtain track support frame, an endless drive cord, said pulleys supporting said drive cord at about the height of said curtain support elements and said leading edge curtain drive element, said endless drive cord being fixed to said leading edge curtain drive element, a drive pulley engaging said endless drive cord, a reversing electric motor driving said drive pulley, and a remotely situated switch activating said reversing electric motor in either direction, said drive pulley moving said endless drive cord about said curtain track support frame drawing said leading edge curtain drive element about said track opening and closing said curtain.



2. The combination according to claim 1 wherein said leading edge curtain drive element comprises two of said curtain support elements, a solid member pivotally secured between said two curtain support elements, a clamping member disposed below said solid member, said clamping member containing an aperture, and screw means drawing said clamping member toward said solid member, the ends of said drive cord being joined and secured by being passed between said solid member and said clamping member with the ends of said drive cord extending through the aperture in said clamping member, said screw means clamping the ends of said cord between said solid member and said clamping member.

3. The combination according to claim 2 wherein said pulleys support said endless drive cord close to the inner surfaces of said curtain support elements.

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