

Oct. 13, 1942.

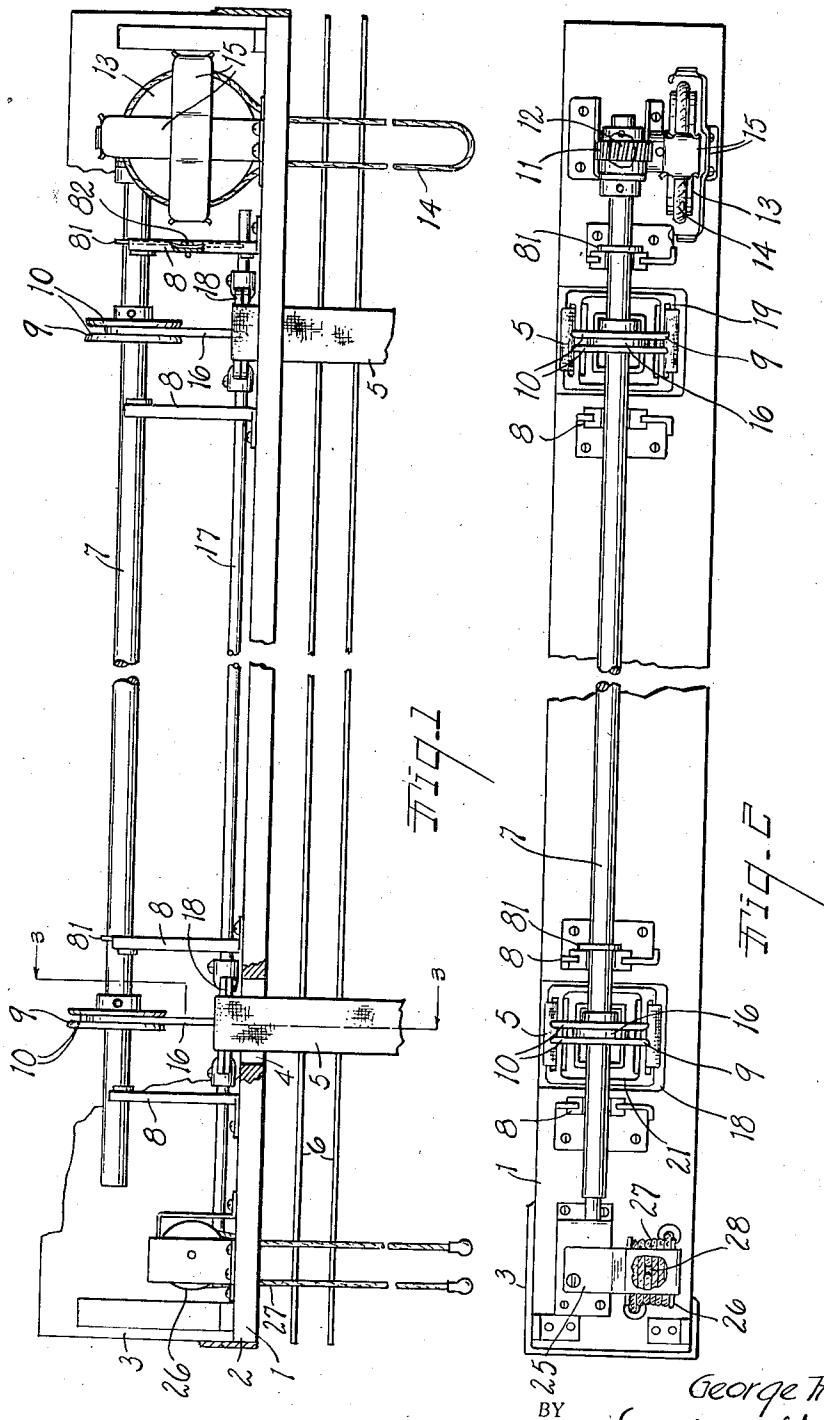
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2,298,538

VENETIAN BLIND

Filed March 10, 1941

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

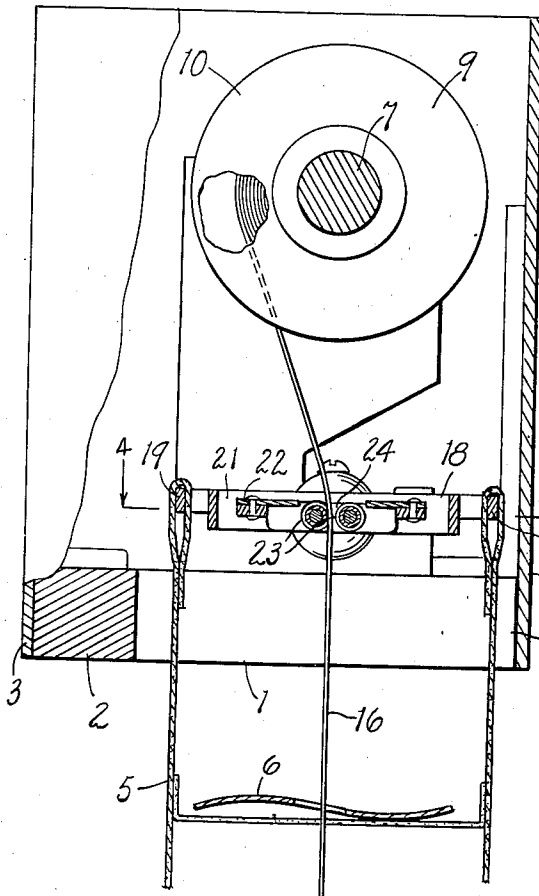


Fig. 3

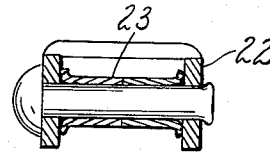


Fig. 5

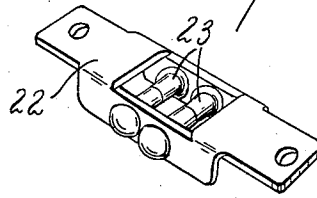


Fig. 6

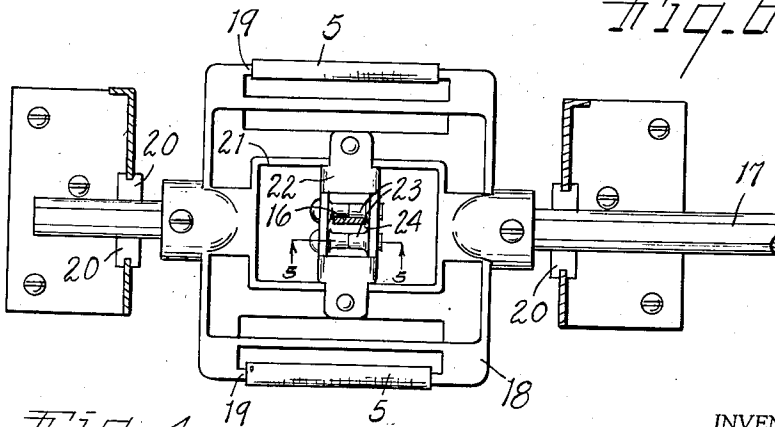


Fig. 4

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UNITED STATES PATENT OFFICE

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VENETIAN BLIND

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Application March 10, 1941, Serial No. 382,565

7 Claims. (Cl. 156—17)

This invention relates to improvements in Venetian blinds.

This invention relates to Venetian blinds and particularly to such blinds which are used for large window openings and which are of such dimensions that the ordinary blind lifting mechanism does not have sufficient capacity.

It has for its objects:

First, to provide a new and improved Venetian blind head construction.

Second, to provide such a construction with a new and improved lifting mechanism and coordinated tilting mechanism.

Third, to provide such a blind in which the commonly employed traverse mechanism is eliminated.

Fourth, to provide such a blind which is simple and relatively inexpensive.

Fifth, to provide a new and improved tilting mechanism which guides the lifting element of the blind and centers it without interfering with its operation.

Further objects and advantages pertaining to details and economies of construction and operation will appear from the description to follow. The invention is defined in the claims. A preferred embodiment of my invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a front view of my improved blind mechanism with the central portion broken away.

Fig. 2 is a top plan view of the mechanism shown in Fig. 1.

Fig. 3 is a detail sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a detail sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a detail sectional view taken on line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the lift element guiding member which forms a portion of the tilting member.

My improved Venetian blind mechanism is provided with a suitable support 1 which may be in the form of a casing having the base supporting board 2 and side members 3. Apertures 4 are provided in the support 2 for the passage of ladder tapes 5 which support the slats 6.

The lifting mechanism consists of a shaft 7 which extends longitudinally of the support and is mounted in suitable bearings 8 for rotation. The shaft is held in place by the clamp 9 which is pivoted at 10 to be swung to position to hold the shaft in place. Fixed on the shaft 7 are spools 9 having wide flanges 10. The shaft is rotated by a suitable worm and gear mechanism

shown at the right end of Figs. 1 and 2, which consists of a worm gear 11 fixed to the shaft 7 and in operative engagement with a worm 12 which is operatively connected to a pulley 13 over which is trained a continuous cord 14 which is retained in place by suitable retaining means 15.

The blind lifting elements consist of thin flat steel ribbons 16 which are of a width to fit between the flanges 10 of the spool 9 and be wound convolutely thereon. These ribbons 16 extend down through the openings 4 as is customary in Venetian blind constructions.

Mounted below the lifting mechanism is the tilting mechanism. This consists of a shaft 17 which is broken to receive tilting elements 18. The tilting elements 18 are plate-like in nature and have means 19 at the edges to which the ladder tapes 5 are fastened. Shaft 17 is supported in suitable bearings 20 for rotation about a central axis for tilting the blind. Across the central space 21 of each tilting element is a roller support 22 which has a pair of rollers 23 pivoted on opposite sides of the axial line of the tilting plate 18 on axes parallel to said tilting axis and to the shaft 7. These rolls 23, which are anti-friction in character, form between them a space 24 through which the ribbon 16 extends. They serve to center the lifting ribbon 16 and to serve as anti-friction members for guiding it during the lifting of the blind. As the blind is raised, the ribbon 16 assumes an off-center position as shown in Fig. 3, making it necessary to provide some sort of guiding means to keep the lifting elements centered between the ladder tapes and the mechanism provided for that is simple and inexpensive and effective.

The tilting is accomplished by a worm gear mechanism 25 which is not shown in detail which is provided with an operating drum 26 around which the cord 27 is wound a plurality of times. The cord is fastened to the drum at its central portion as indicated at 28.

My new and improved blind is very simple and inexpensive. The use of the spools and ribbon with the coacting guiding and tilting members makes it unnecessary to employ any complicated traversing mechanism such as has been commonly used in such blinds.

The terms and expressions which have been herein employed are used as terms of description and not of limitation. There is no intention in the use of such terms and expressions of excluding any equivalents of the features shown and described. It is recognized that various

modifications are possible within the scope of the invention claimed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a Venetian blind having a suitable head support, a blind lifting shaft extending longitudinally of said support and having suitable bearings supporting it for rotation, a plurality of spaced wide flanged spool members fixed thereon and a thin flat metal blind lifting ribbon of a width to fit said spools and be wound convolutely thereon attached to each spool to be wound thereon for lifting the blind, a tilting member disposed below each of said spools and adapted to support the ladder tapes of the blind, each tilting member having an axially disposed central aperture through which the lifting ribbon passes and provided at each side thereof with an anti-friction roller on an axis extending parallel with the lifting shaft and adapted to engage and guide said steel ribbon during raising and lowering of the blind and hold said lifting ribbon centrally of said tilting member and the ladder tape supported thereby.

2. In a Venetian blind having a suitable head support, a blind lifting shaft extending longitudinally of said support and having suitable bearings supporting it for rotation, a plurality of spaced wide flanged spool members fixed thereon and a thin flat metal blind lifting ribbon of a width to fit said spools and be wound convolutely thereon attached to each spool to be wound thereon for lifting the blind, a tilting member disposed below each of said spools and adapted to support the ladder tapes of the blind, each tilting member having a central aperture through which the lifting ribbon passes and provided at each side thereof with an anti-friction roller on an axis extending parallel with the lifting shaft and adapted to engage and guide said steel ribbon during raising and lowering of the blind and hold said lifting ribbon centrally of said tilting member and a ladder tape supported thereby.

3. In a Venetian blind having a suitable head support, a blind lifting shaft extending longitu-

dinally of said support and having suitable bearings supporting it for rotation, a plurality of spaced wide flanged spool members fixed thereon and a thin flat metal blind lifting ribbon of a width to fit said spools and be wound convolutely thereon attached to each spool to be wound thereon for lifting the blind, a tilting member disposed below each of said spools and adapted to support the ladder tapes of the blind, each tilting member having a central aperture through which the lifting ribbon passes and provided with an anti-friction roller on an axis extending parallel with the lifting shaft and adapted to engage and guide said steel ribbon during raising and lowering of the blind and hold said lifting ribbon centrally of said tilting member and a ladder tape supported thereby.

4. In a Venetian blind, a tilt member comprising a centrally apertured plate mounted for tilting about a central axis, means at the edges of said plate adapted to engage the ladder tape, and a pair of closely spaced anti-friction lifting element engaging rollers disposed on said plate on axes parallel to and spaced on opposite sides of the axis of tilting of said plate.

5. In a Venetian blind, a tilt member comprising a centrally apertured plate mounted for tilting about a central axis, and a pair of closely spaced anti-friction lifting element engaging rollers disposed on said plate on axes parallel to and spaced on opposite sides of the axis of tilting of said plate.

6. In a Venetian blind, a tilt member mounted for tilting movement about a central axis and having a central aperture with a pair of anti-friction lifting element engaging rollers disposed on axes parallel to the tilting axis of said tilt member in said aperture to guide a lifting element through said tilt member.

7. In a Venetian blind, a tilt member mounted for tilting movement about a central axis and having a central aperture with an anti-friction lifting element engaging roller disposed on an axis parallel to the tilting axis of said tilt member in said aperture to guide a lifting element through said tilt member.

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