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2,200,143

VENETIAN BLIND

Filed July 24, 1939

FIG. 1.

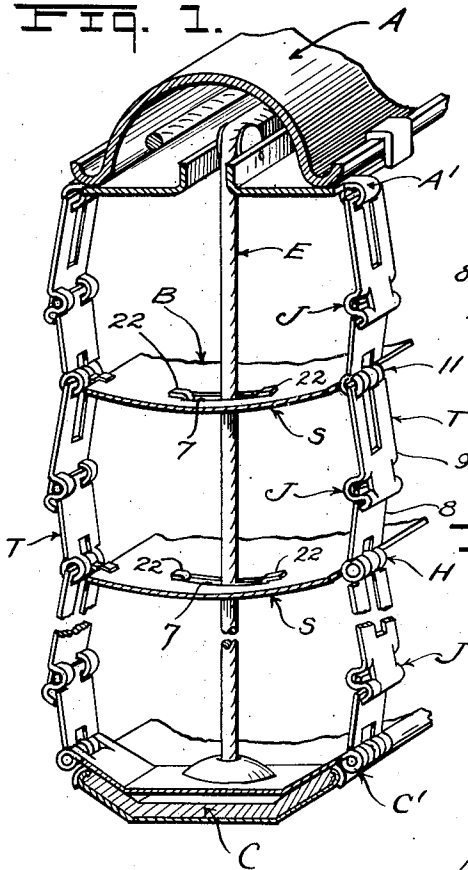


FIG. 2.

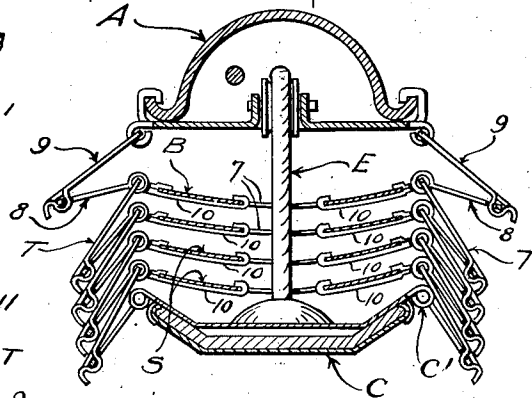


FIG. 3.

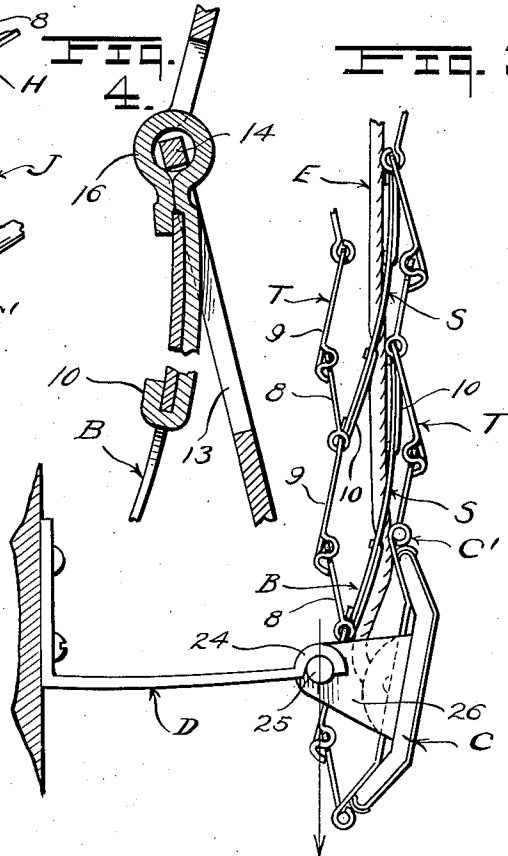


FIG. 4.

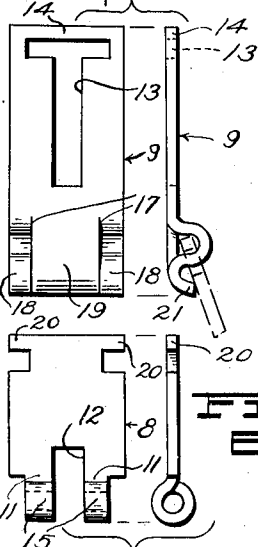


FIG. 5.



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VENETIAN BLIND

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9 Claims. (Cl. 156—17)

My invention has for its primary object the provision of a new and improved construction for Venetian blinds and has particular reference to metal links which as tapes or chains are especially constructed for use with thin metal slats such as the extremely thin flexible spring steel type now popular, and also comprehends parts and elements which are constructed and relatively arranged so as to permit of a tight closing of the slats, a smooth and reliable tilting and raising and lowering action of the slats, a fireproof construction throughout, an ease of assembling the blind, and the provision for holding all hinge joints under such tension as to prevent rattling and insure the retention of the blind in positions to which adjusted.

Another purpose of my invention is to provide as an article of manufacture a metal tape or chain made up of hinged links and slat attaching clips and subject to convenient and efficient use in making up Venetian blinds of thin slats, particularly, extremely thin flexible spring steel slats that are curved in cross-section, said tape or chain of links not only making possible a quicker and easier assembly of a Venetian blind without requiring any changes in the construction of the slats, but providing for effectively strengthening the blind, affording a tighter closing thereof and rendering the operation of the blind easier and more reliable.

A further purpose is to provide a Venetian blind of the character described wherein the links between slats extend outwardly and downwardly therefrom in small folded compass when the blind is collapsed in raised position, whereby the blind may be collapsed in smaller compass horizontally as well as vertically and will not occupy appreciable space in these directions in the window opening.

Another object is to provide a Venetian blind of the character described wherein the metal links between slats will interfit or nest so that the slats may be closely engaged and overlapped when closed.

A further purpose is to provide a Venetian blind wherein a resilient bracket for holding the blind in place exerts a spring action tending to tilt the foot rail when the blind is adjusted to close the slats, thereby insuring and maintaining a tight closing action.

I have shown in the accompanying drawing a preferred form of Venetian blind embodying my invention, subject, however, to modification within the scope of the appended claims, without departing from the spirit of my invention.

Referring to the drawing:

Fig. 1 represents a fragmentary perspective view of a Venetian blind embodying my invention, showing parts in cross-section.

Fig. 2 is a cross-sectional view of the blind as when raised and collapsed.

Fig. 3 is a fragmentary side elevation of the blind as when the slats are overlapped and closed.

Fig. 4 is an enlarged detail section showing the manner of securing the links to the slats.

Fig. 5 is a composite elevational view of one of the links.

Fig. 6 is a composite elevational view of one of the other or companion links.

One form of Venetian blind embodying my invention is shown in the accompanying drawing and includes a tiltable head rail A adapted to be supported in a window frame not shown in any suitable manner, a blind B depending therefrom, a tiltable foot rail C, a spring bracket D for resiliently holding the foot rail in place and conventional means including a cord E operable in the usual manner for raising and lowering the blind. The blind may be tilted by hand or with any conventional means for disposing the slats at different angles. Since the means for supporting the head rail A and the tilting means form no part of the present invention, illustration thereof is deemed unnecessary.

My invention deals primarily with the means for connecting and supporting the slats S of the blind. As here shown the slats are formed of flexible and very thin steel strips or plates which are arcuate in cross section to provide the necessary strength and rigidity, each slat having transverse slots 7 whereby the cord E attached to the foot rail may be extended upwardly through said slats to the head rail A and the slats may be tilted as desired relative to said cord. The means for connecting and supporting said slats comprises a plurality of metal tapes or chains T made up of a series of links 8 and 9 and slat attaching clips 10 hingedly connected with one another. The links 8 are provided at their lower ends with laterally spaced tongues 11 separated by a slot 12 whereas the upper ends of the links 9 are provided with T shaped slots 13 forming hinge bars 14 around which the tongues are bent as eyes 15 whereby to form the hinge joints H in the chain or tape of links. The clips 10 are attached at the hinge joints H and are in the form of narrow metal strips, the outer ends of which are bent around the hinge bars 14 as eyes 16 disposed between the eyes

15 and extending into the T shaped slots 13 as shown in Fig. 4. The lower ends of the links 9 are formed with longitudinal slits 17 defining tongues 18 separated by a wider tongue 19. These tongues 18 and 19 are first bent so as to permit of the insertion therebetween of the pintles 20 formed on the upper end of the links 8, following which the tongues 18 are bent into S shape while the tongues 19 remain comparatively straight and form with tongue 18 barrels for hingedly accommodating the pintles 20 for forming the hinge joints J. The ends 21 of the tongues 18 and 19 are bent to engage the inner faces of the links 8 as stops, for limiting the hinge action to an outward extension of the links 8 and 9 as will be later described. It will now be seen that the links 8 and 9 as here constructed and as connected by means of the hinge joints H and J, provide metal tapes to which by reason of the clips 10, likewise hinged to the joints H, the metal slats may be readily and easily connected in the formation of a Venetian blind structure.

The attachment of the slats to the tapes T is effected by extending the clips 10 from outer edges of the slats beneath the latter as shown in Figs. 2 and 4, and bending the inner ends of the clips as at 22 up through the slots 7 so as to lie upon the upper faces thereof. The outer ends 23 of these clips are disposed to overlie the slats as shown in Figs. 2 and 4 and in this manner the clips 10 securely hold the slats on the tapes or chains T. It is then seen that the joints H are disposed at the edges of the slats whereas the joints J are intermediate the slats and therefore the spacing between the slats is substantially equal to the length of one of the links 8 plus its companion link 9. In other words there are provided between slats a plurality of two-section links each consisting of a link 8 and a link 9. The lowermost link is hinged to a footrail carried hinge member C', whereas the uppermost link is hinged to eyes A' on the head rail A.

Due to the fact that the links 8 are shorter than and disposed below the links 9, between each pair of slats, and the ends 21 act to limit the inward movement of the links on the hinge joint J to prevent inward folding thereof, it is seen that when the footrail C is raised and the blind collapses on said rail, the links will fold on the joints J so as to extend downwardly and outwardly from the longitudinal edges of the slats as shown in Fig. 2. Thus the blind is folded into small compass and takes up comparatively little room horizontally and vertically.

Whether the slats S are tilted by hand or other means, it is seen that they may be tightly closed when desired as shown in Fig. 3, and likewise partly or fully opened. The shanks of the T shaped slots 13 in the links 9 are adapted to receive the clips 10 as shown in Fig. 4 to permit of bringing the slats closer together for tightly closing the blind.

It should be noted that the lower end of the blind is resiliently held in place by the spring metal bracket D which has hook ends 24 engaged with trunnions 25 on upstanding ears 26 of the foot rail C. When the footrail turns or tilts with the tilting of the blind the spring bracket exerts a leverage through the ears 26 tending to turn or tilt the footrail and maintain the parts in position to which adjusted. The spring action of the bracket D takes up all slack and prevents rattling of all parts of the blind.

It should be noted that the tapes or chains

T of links are constructed so that they may be readily machine made and assembled in desired lengths for immediate use in making up Venetian blinds composed of relatively thin slats and that no change in the standard construction of such slats is required.

I claim:

1. A strap for connecting and supporting the slats of a Venetian blind, comprising a plurality of hingedly joined links and slat attaching clips of which the clips are connected with certain hinge joints of said links whereby the other hinge joints will be disposed between the slats, means embodied at said other hinge joints for limiting the hinge action of said links so that they will extend outwardly from the slats, certain of said links being shorter than the others whereby the links will extend downwardly as well as outwardly when the blind is collapsed.

2. A strap for connecting and supporting the slats of a Venetian blind, comprising a plurality of hingedly joined links and slat attaching clips of which the clips are connected with certain hinge joints of said links whereby the other hinge joints will be disposed between the slats, means embodied at said other hinge joints for limiting the hinge action of said links so that they will extend outwardly from the slats, certain of said links being shorter than the others whereby the links will extend downwardly as well as outwardly when the blind is collapsed, certain of said links having slots therein into which portions of said clips may extend for affording a tight closing of said slats.

3. A strap for connecting and supporting the slats of a Venetian blind comprising a plurality of hingedly joined links and slat attaching clips, certain of said links having T shaped slots therein defining at certain ends thereof transverse hinge bars, laterally spaced tongues at certain ends of the other of said links, adapted to be bent around said hinge bars as eyes, and eyes formed on certain terminals of said clips and surrounding said hinge bars and disposed between the first named eyes for hingedly connecting the clips with the links, said clips being adapted to extend into portions of said slots when the slats of the blind are tilted.

4. A strap for connecting and supporting the slats of a Venetian blind comprises a plurality of hingedly joined links and slat attaching clips, certain of said links having T shaped slots therein defining at certain ends thereof transverse hinge bars, laterally spaced tongues at certain ends of the other of said links, adapted to be bent around said hinge bars as eyes, and eyes formed on certain terminals of said clips and surrounding said hinge bars and disposed between the first named eyes for hingedly connecting the clips with the links, said clips being adapted to extend into portions of said slots when the slats of the blind are tilted, tongues formed on the other ends of said certain links and bendable for forming hinge barrels, and pintles formed on the other ends of said other links and rotatable in said barrels.

5. A strap for connecting and supporting the slats of a Venetian blind, comprising a plurality of hingedly joined links and slat attaching clips, certain of said links having T shaped slots therein defining at certain ends thereof transverse hinge bars, laterally spaced tongues at certain ends of the other of said links adapted to be bent around said hinge bars as eyes, and eyes

formed on certain terminals of said clips and surrounding said hinge bars and disposed between the first named eyes for hingedly connecting the clips with the links, said clips being adapted to extend into portions of said slots when the slats of the blind are tilted, tongues formed on the other ends of said certain links and bendable for forming hinge barrels, and pintles formed on the other ends of said other links and rotatable in said barrels, said last named tongues having terminals bent to serve as stops for limiting the hinge movement of said links at the hinge joints formed by said barrels and pintles.

6. A Venetian blind including a tiltable head rail, tapes suspended therefrom, a tiltable foot rail supported by said tapes, each of said tapes including a plurality of hingedly joined links and slat attaching clips, slats secured to said clips and means for tiltably and resiliently holding said foot rail so as to place said links and clips under tension.

7. A Venetian blind including a tiltable head rail, tapes suspended therefrom, a tiltable foot rail supported by said tapes, each of said tapes including a plurality of hingedly joined links

and slat attaching clips, slats secured to said clips and means for tiltably and resiliently detachably holding said tapes under tension.

8. A Venetian blind including a tiltable head rail, tapes suspended therefrom, a tiltable foot rail supported by said tapes, each of said tapes including a plurality of hingedly joined links and slat attaching clips, slats secured to said clips and means for tiltably and resiliently holding said foot rail so as to place said links and clips under tension, including upstanding members on said foot rail, lateral trunnions on said upstanding members and spring metal brackets in tensioned engagement with said trunnions.

9. A Venetian blind including a plurality of suspended tapes, a tiltable foot rail supported by said tapes, each of said tapes including a plurality of hingedly connected links, slats connected with links of said tapes, upstanding members on said foot rail, trunnions on said upstanding members, and spring metal brackets in tensioned engagement with said trunnions for exerting a downward pressure thereon.

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