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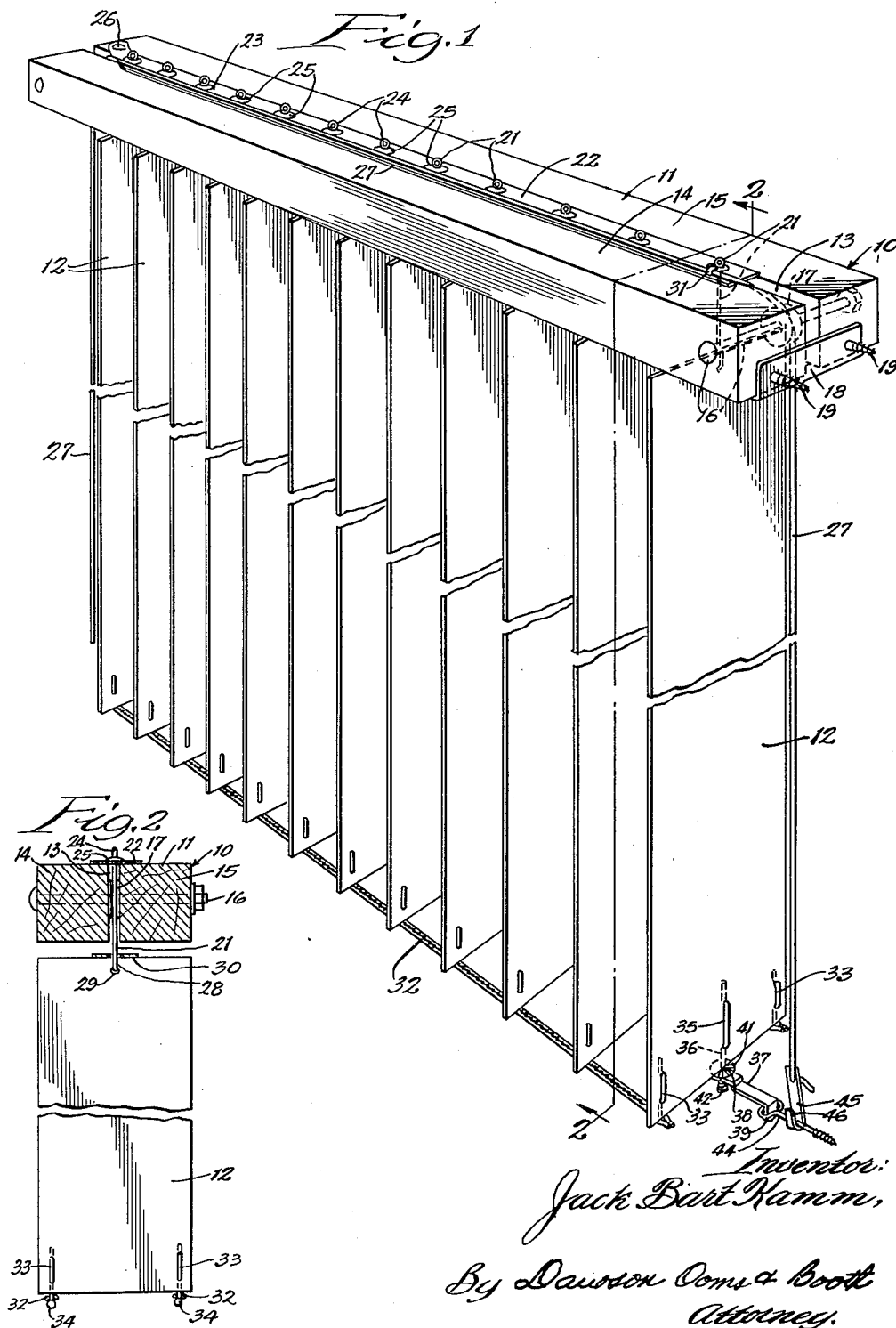
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2,503,441

VERTICAL SLAT BLIND CONSTRUCTION

Filed July 20, 1945

2 Sheets-Sheet 1



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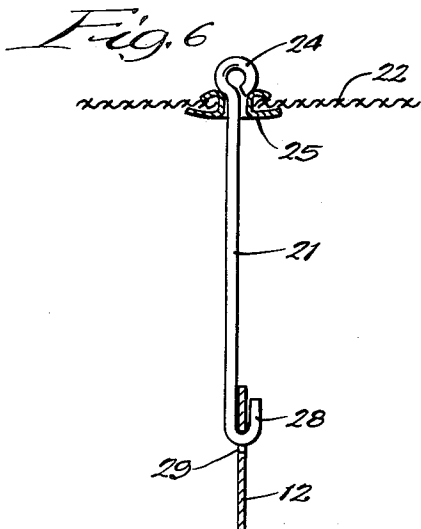
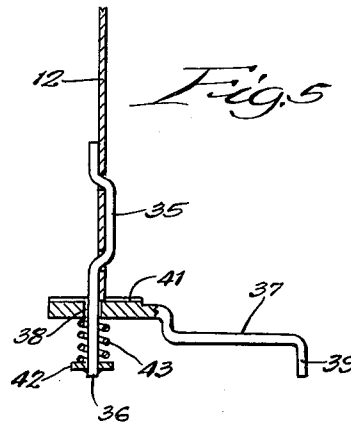
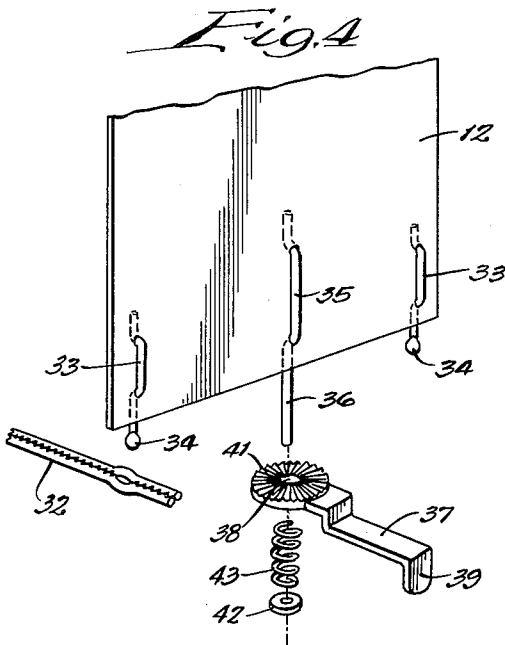
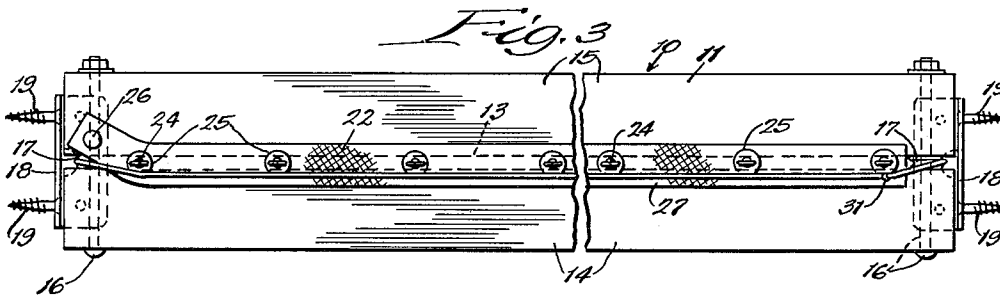
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VERTICAL SLAT BLIND CONSTRUCTION

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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VERTICAL SLAT BLIND CONSTRUCTION

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9 Claims. (Cl. 160—172)

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The invention relates to an adjustable blind of the type in which control of light and vision is governed by the position and arrangement of a plurality of vertically disposed slats.

It is another object to provide a blind which is simple and inexpensive to manufacture and which can easily be installed to fit substantially any opening size. One feature of the invention is that the blind can be cut to size and installed on the job.

Still another object is to provide a blind in which the slats can easily be removed for cleaning and can easily be reassembled.

It is a further object of the invention to provide a blind of the vertical slat type which is conveniently constructed and in which the slats may be adjusted either as to their spaced arrangement over the opening or to their angle of rotation.

Further objects and advantages will be apparent from the following description and the drawings appended thereto.

In the drawings, in which like reference characters refer to like parts:

Fig. 1 is a perspective view of one embodiment of the invention;

Fig. 2 is a view taken on lines 2—2 of Fig. 1;

Fig. 3 is a plan view of the supporting frame construction;

Fig. 4 is an enlarged, expanded view in perspective of the bottom portion construction of one of the outside slats;

Fig. 5 is a side elevational view in section of the construction shown in Fig. 4; and

Fig. 6 is a detailed view of the hanger pin assembly.

In the preferred embodiment of the invention as illustrated in the drawings, the adjustable blind 10 comprises supporting frame 11 having a plurality of slats 12 extending downwardly from the frame. The supporting frame 11 includes slot 13 which may be formed by securing frame members 14 and 15 together with fastening means 16 with washer 17 secured between the members. The supporting frame 11 is of sufficient dimensions to be secured to the top and between the sides of a window frame. The supporting frame 11 is secured adjacent to the sides of an opening such as a window frame by means of brackets 18 including fastening means 19.

The slot 13 is of sufficient width to accommodate hanger pins 21 which extend through the slot and support slats 12. The hanger pins 21 are supported on the supporting frame and within slot 13 by means of flexible spacer 22 which

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may be a fabric tape, ribbon, or the like. Openings 23 are provided in the flexible spacer for supporting the hanger pins by means of the enlarged upper portion 24 of the pin. The openings 23 are spaced equidistantly along the length of the spacer, the distance between the openings being equal to the desired space between slats 12. Adequate support of the hanger pins by the spacer 22 may be insured by surrounding openings 23 with metal eyelets 25 which have an outer diameter sufficient to engage both edges of the slot and an inner diameter of a size that will engage upper enlarged portion 24 of the hanger pins. One end of the flexible spacer 22 is secured to supporting frame 11 as by fastening means 26.

Means for adjusting the spacing of the slats with respect to each other, such as cord 27, extends over the upper surface of the supporting frame 11 and through the slot at either end of the frame over washers 17. The cord 27 is secured to the end of the flexible spacer 22 at point 31 opposite the end of the spacer that is secured to the supporting frame.

Slats 12 are supported on hanger pins by means of a hook portion 28 formed on the lower end of the pin. The hook portion 28 of the pin extends through opening 29 in the center of the upper portion of each slat.

In the operation of the adjustable window blind construction that has been described, the slats 12 are spaced between the sides of the window frame by pulling cord 27. To move the slats completely across the window, the portion of the cord adjacent the free end of the flexible spacer is pulled so as to draw the flexible spacer along the length of the supporting frame until the spacer is fully extended. At this point the slats are equidistantly spaced from each other completely across the window. To move the slats to one side of the window frame, the portion of the cord adjacent the secured end of the flexible spacer is pulled so as to fold the spacer and bring the slats adjacent to each other. Preferably a washer 30 as seen in Fig. 2 is placed on the hanger pin for at least the end slat to prevent binding of the slat against the frame during movement.

To insure an angle of rotation of each of the slats 12 that is uniform throughout the blind, spacer elements 32 are rotatably secured to the bottom portion of each of the slats at the opposite sides of its center line. The spacer element 32 may be similar to the element 32 or may be a flexible strip formed of two cords secured to-

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gether throughout the major portion of their length and separated periodically to form openings similar to buttonholes. The elements 32 may be secured to the slats by metal fittings 33 having enlarged lower portions 34 to enter the openings in the spacer element in the manner of buttons.

Each of the slats 12 adjacent the sides of the window frame carries a metal fitting 35 secured to the center of the bottom portion of the slat and having shank 36 extending below the slat. The shank 36 is adapted to extend rotatably, through an opening 38 in a latch bar 37 which is offset to clear the pins 33 as shown. The latch includes tongue 39 formed perpendicularly to the main portion of the latch. The upper surface of the portion of the latch adjacent the slat may include a plurality of grooves 41 adapted to engage the bottom edge of the slat at any angle of rotation of the slat. The latch may be secured on shank 36 by fastening means 42 which may comprise a washer riveted on the end of the shank. To insure contact of groove portion 41 to the bottom edge of the slat, spring 43 may be provided with washer 42 and the latch to force the latch upwardly. The tongue 39 is adapted to engage fastening means 44 which are secured to the sides of the window frame.

The construction of the lower portion of the window blind is for the purpose of retaining the spaced arrangement of the slats across the window in the desired angle of rotation. In utilizing this construction after the slats are spaced across the window by pulling cord 27, tongues 39 of the latches are engaged with fastening means 44, thereby drawing cords 32 taut between the slats. The slats are then rotated to the desired angle by turning any desired one of the slats, the bottom edges of the end slats rotating over grooves 41 of the latch. After the slats have been adjusted, the desired angle of rotation is maintained by the grooves 41 being forced against the bottom edges of the slats by spring 43.

The fully extended spacing of the upper portion of the slats is insured by the use of a friction lock 45 having hook portion 46 and opening 47. The rope is threaded through the opening 47 and engages the lock at a point where flexible spacer 22 is taut when the hook portion 46 is engaged with fastening means 44.

To install a window blind according to the invention it is necessary only to cut the frame members 11 to length and to secure them together with the spacers 17 between them. A section of tape 23 provided with eyelets 25 may then be tacked at one end to the frame and the hanger pins 21 inserted. The slats with the fittings 33 and 35 secured thereto may then be cut to length and punched at their upper ends to receive the hanger pins. Thereafter the guide cords 32 may be cut to length and installed, the latches 37 may be attached to the end slats, and the pull cord 17 attached to complete the assembly. It will be seen that these operations can all be easily performed by hand on the job without requiring measuring and factory fabrication and also that the blind can easily be disassembled for cleaning.

The above detailed description is given for purposes of illustration and the invention is to be limited only by the scope of the appended claims.

I claim:

1. An adjustable window blind which comprises a supporting frame having a slot extending lengthwise of the frame, a flexible spacer positioned over the slot and having a plurality of

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openings therein, one end of the spacer being secured to one end of the frame, a plurality of hanger pins supported on the frame and extending through the openings of the spacer and through the slot, a plurality of slats respectively supported on the pins and extending downwardly from the frame, and means secured to the free end of the spacer for adjusting the spacing of the slats.

2. An adjustable window blind which comprises a supporting frame having a slot extending lengthwise of the frame, a flexible spacer positioned over the slot and having a plurality of openings therein, one end of the spacer being secured to one end of the frame, means extending through the spacer for supporting a plurality of slats below the frame, a plurality of slats supported on said means and extending downwardly from the frame, and means secured to the free end of the spacer for adjusting the spacing of the slats.

3. An adjustable window blind which comprises a supporting frame having a slot extending lengthwise of the frame, a flexible spacer positioned over the slot and having a plurality of openings therein, one end of the spacer being secured to one end of the frame, a plurality of hanger pins supported on the frame and extending through the openings of the spacer and through the slot, a plurality of slats rotatably supported respectively by the pins and extending downwardly from the frame, means secured to the free end of the spacer for adjusting the spacing of the slats with respect to each other, a guide element pivotally secured to the bottom portion of each of the slats, and means secured to the center of the outside slats for holding the slats in spaced position.

4. In an adjustable window blind, a supporting frame having a slot extending lengthwise of the frame, a perforated flexible spacer positioned over the slot and having one end secured to one end of the frame, hanger pins extending through the perforated spacer, slats supported on the pins and extending downwardly from the frame, and means for adjusting the spacing of the slats.

5. In an adjustable window blind, a hanger pin assembly which comprises a flexible spacer having a plurality of openings therein, means for supporting the spacer along each edge, a plurality of hanger pins extending through said openings, and a plurality of slats supported on said pins and extending downwardly therefrom.

6. In an adjustable window blind, a hanger pin assembly which comprises a flexible spacer having a plurality of openings therein, eyelets secured around the openings of the spacer, means for supporting the eyelets, a plurality of hanger pins extending through the eyelets, and a plurality of slats supported on said pins and extending downwardly therefrom.

7. In an adjustable window blind having a plurality of vertical slats, a latch assembly which comprises a fitting secured to the center of the bottom portion of an end slat and having a shank extending below the bottom edge of the slat, a latch pivotally secured on the shank and having a plurality of grooves in its upper surface to engage the lower edge of the slat, said latch having a tongue adapted to engage fastening means mounted adjacent said end slat, and a spring secured on the shank below the latch forcing the grooves into engagement with the bottom edge of the slat.

8. A blind comprising a supporting frame hav-

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ing a slot extending lengthwise of the frame, said supporting frame being adapted for mounting in the upper part of an opening, a flexible spacer positioned over the slot and having a plurality of openings therein, one end of the spacer being secured to one end of the supporting frame, a plurality of hanger pins supported on the supporting frame and extending respectively through the openings of the spacer and through the slot, a plurality of slats rotatably supported on the pins respectively and extending downwardly from the supporting frame, means secured to the free end of the spacer for adjusting the spacing of the slats, a spacer element pivotally secured to the bottom portion of each of the slats, and means mounted adjacent the sides of the blind and cooperating with the spacer element to hold the slats spaced from each other when the blind is in fully extended position.

9. An adjustable blind comprising a series of vertically extending rotatable slats, a pair of flexible spacer elements connected to the slats adjacent their bottom ends and at opposite sides

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of their center lines, a pin secured to the central lower part of an end slat of the series, and an arm mounted on the pin and frictionally engaging said end slat yieldingly to resist rotation thereof for connection to a fixed part adjacent the blind thereby yieldingly to hold the slats in a selected angular position.

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