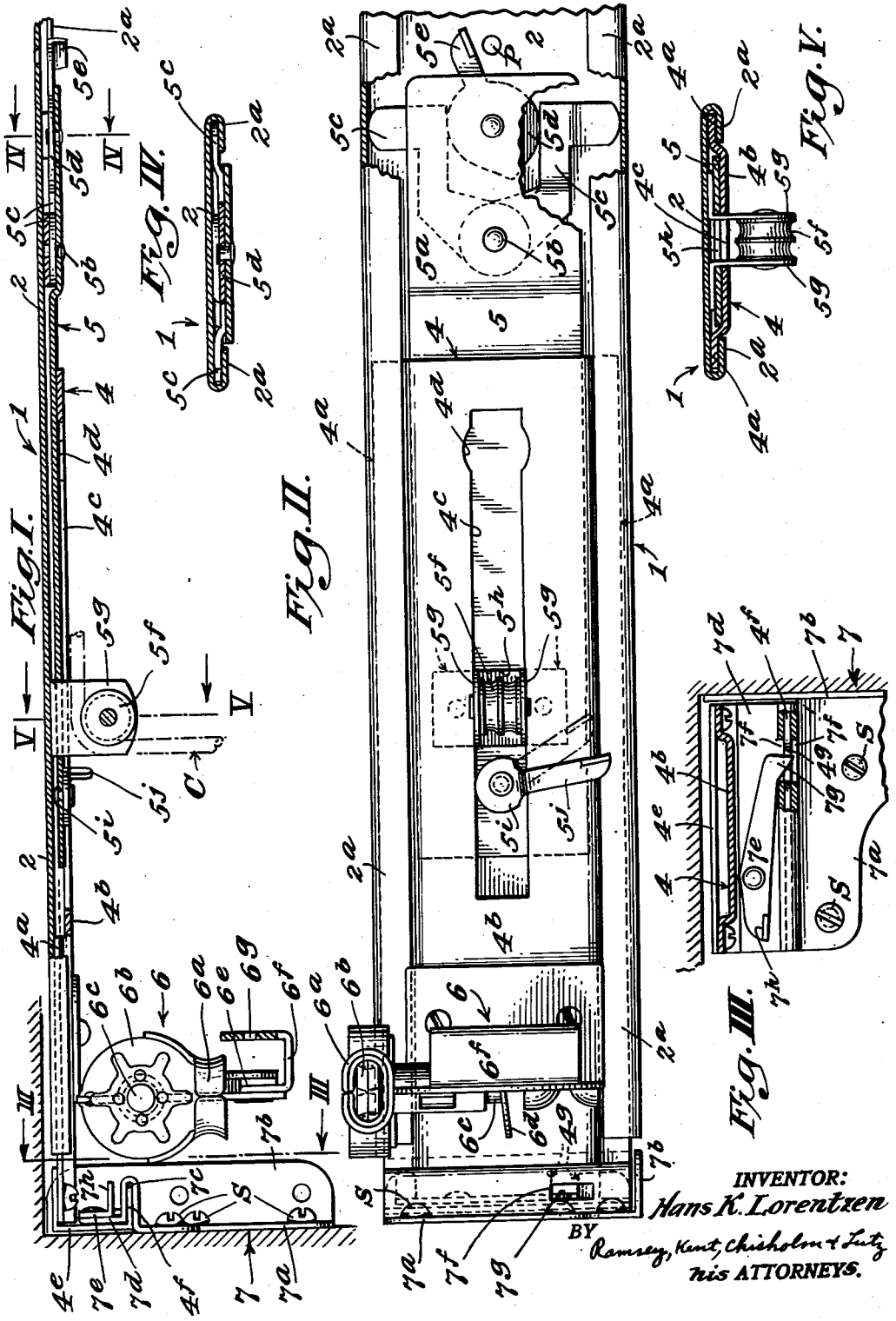
Nov. 26, 1940. H. K. LORENTZEN 2,222,674

HEAD BAR ORGANIZATION FOR VENETIAN BLINDS

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HEAD BAR ORGANIZATION FOR VENETIAN BLINDS

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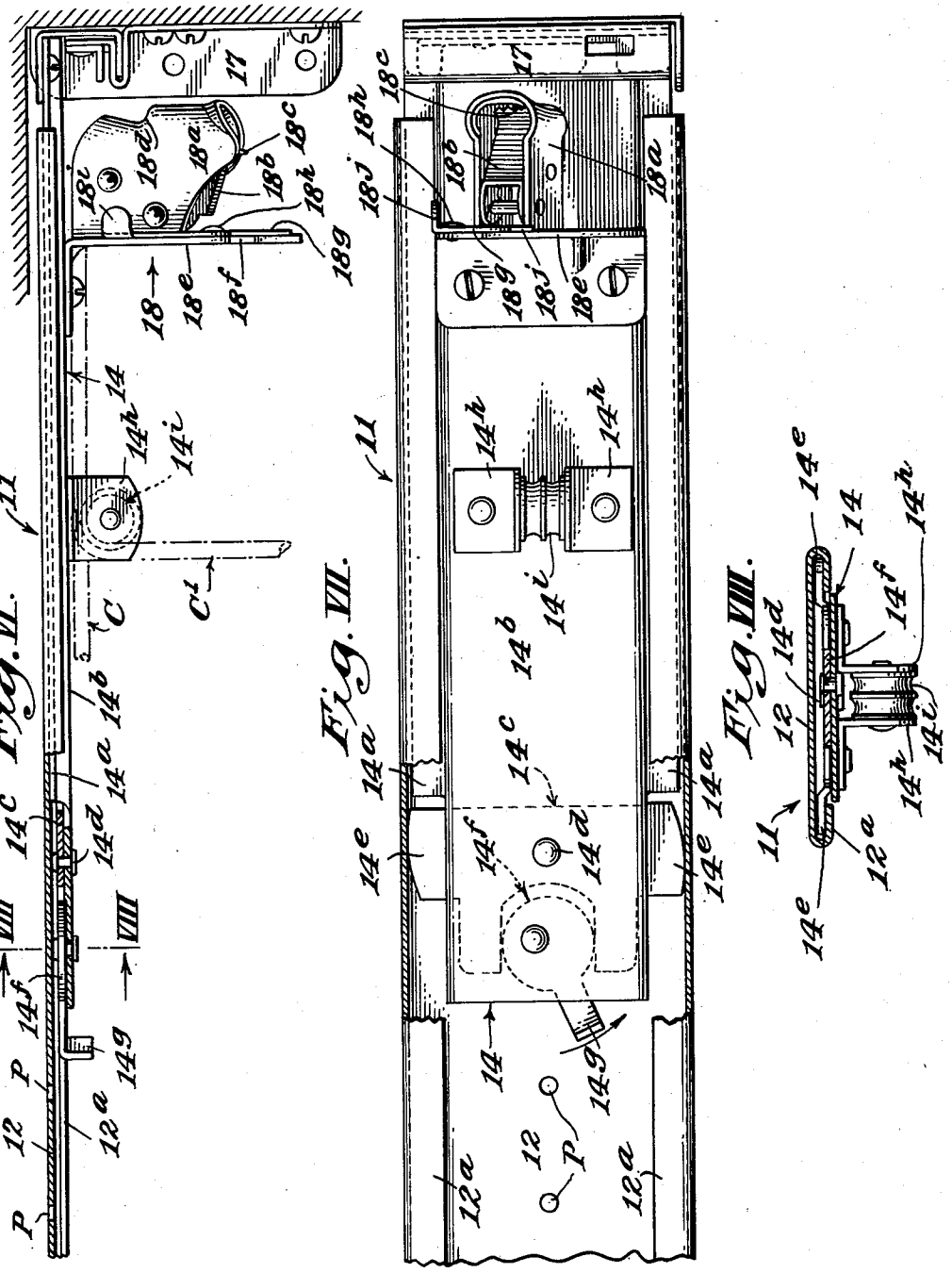


Fig. VII.

Fig. VI.

Fig. VIII.

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HEAD BAR ORGANIZATION FOR VENETIAN BLINDS

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7 Claims. (Cl. 156—17)

This invention relates broadly to Venetian blinds, and particularly to a structure for supporting and actuating the blind.

A Venetian blind consists essentially of a plurality of slats which are suspended in superimposed relationship and are connected with mechanism for tilting the slats and raising and lowering the same. The usual practice is to suspend the assembly of slats from a wooden head-bar that is cut to length for the particular window to which the blind is to be fitted. This head-bar is channelled to receive operating cords, and to the head-bar are fitted individual mechanical elements for supporting and manipulating the assembly of slats. This cutting and outfitting of the head-bar has to be done by the maker of the blind, without the advantages and economies which can be effected by factory quantity production.

An object of the invention is to provide a fabricated head-bar for Venetian blinds, which is expansible in length to adapt it for windows of different widths.

Another object of the invention is to provide a fabricated sheet metal head-bar organization which includes improved and convenient means for mounting the head-bar itself.

Other objects of the invention will be obvious from the following disclosure of two specific embodiments of the invention.

Figure I is a view partly in front elevation and partly in vertical section. The view shows the left-hand portion of the supporting and actuating mechanism mounted on a window frame.

Figure II is a bottom plan view, with parts broken away, showing the structure illustrated in Figure I.

Figure III is a vertical section taken in general on the line III—III of Figure I.

Figure IV is a vertical section taken approximately on the line IV—IV of Figure I.

Figure V is a vertical section taken approximately on the line V—V of Figure I.

Figure VI is a view partly in front elevation and partly in vertical section. The view shows the right hand portion of a modified form of the invention.

Figure VII is a bottom plan view, with parts broken away, showing the structure illustrated in Figure VI.

Figure VIII is a vertical section taken approximately on the line VIII—VIII of Figure VI.

The illustrated structure comprises an expansible head-bar that is supported by brackets which are mounted on the opposite sides of a window frame. One end of the head-bar carries a device for tilting the blind and the other end carries a cord lock. Except for these two different fittings on the two ends, the structure is symmetrical about its mid section. In order that the drawings might be made on an adequate scale, only one half (approximately) of the structure is shown for each of the two forms of the invention; and it will be understood that the missing half of the symmetrical structure is the same as the half shown except that it is of opposite hand. The tilting mechanism and cord lock are the same in the two forms of the invention; and the left half of the structure is shown for the first form of the invention (Fig. I) to include the tilting mechanism, and the right half of the structure is shown for the second form of the invention (Fig. VI) to include the cord lock.

Figs. I Through V

The head-bar, designated as a whole by 1, has a center section 2 which is flat and somewhat tube-like in form. This section 2 may be made from a strip of heavy sheet metal by folding edge portions 2^a back upon the strip so that the edge portions are parallel to and spaced from the body of the strip, as is well shown in Fig. V. Telescoped in each end of the center section 2, is a sheet metal end section, designated as a whole by 4. End section 4 has edge portions 4^a which make a sliding fit with the center section 2, and has a depressed center portion 4^b.

Slidably positioned between center section 2 and end section 4 is an intermediate section, designated as a whole by 5. The inner end of section 5 is depressed at 5^a and this depressed portion is provided with a pivot 5^b for two locking legs 5^c,5^c. Also pivoted to depress portion 5^a is a slow rise double cam 5^d which may be actuated by lever 5^e to force legs 5^c into holding engagement with the inside edges of center section 2. A double grooved pulley 5^f is journalled on L-shaped support 5^g,5^g. These supports pass upwardly through a slot 4^c in end section 4, then through a rectangular hole 5^h in section 5, and are permanently secured to the top of section 5, as by being welded thereto. To permit assembly of the parts with the pulley attached to section 5, slot 4^c may be enlarged at 4^d. Pivoted to section 5 is a slow rise cam 5^i which may be manipulated by lever 5^j to make holding engagement with the edge of slot 4^c.

From the foregoing description it will be apparent that the head-bar 1 is expansible lengthwise to adapt it for windows of different width.

By moving lever 5e clockwise (viewed as in Fig. II), the legs 5c are released, and end section 4 and intermediate section 5 may then be moved as a unit in telescopic relation with center section 2. By moving lever 5j counterclockwise (viewed as in Fig. II) the hold of cam 5i is released, and end section 4 may then be moved alone in telescopic relation with center section 2 and intermediate section 5. This last adjustment makes it possible to position pulley 5f at different distances from the end of the head-bar. Once the desired adjustment has been effected, the levers 5e and 5j are manipulated to clamp the various sections in their adjusted position.

Attached to the left hand end of section 4 is blind tilting mechanism, designated as a whole by 6. This tilting mechanism may be of any suitable type, but the mechanism illustrated will now be described briefly. A loop 6a is adapted to guide an operating cord (not shown) over a pulley 6b, which rotates a shaft 6c. Shaft 6c is provided with a single convolution worm 6d, which actuates a pivoted gear sector 6e. Affixed to gear sector 6e is a U-shaped stamping 6f, having a slot 6g to removably receive a fitting on one end of the tilt bar of the blind (not shown). Thus, rotation of pulley 6b tilts member 6f on an axis parallel to the head-bar 1. For a more complete description of the tilting mechanism 6, see my Patent 2,110,710 issued March 8, 1938.

A sheet metal bracket, designated as a whole by 7, has two perpendicular faces 7a and 7b. Both of these faces are provided with screw holes, and either face may be used for mounting the bracket. When the bracket is mounted inside of a window frame, as shown in Fig. I, mounting screws S are inserted through bracket face 7a. When the bracket is mounted on the front of a window frame, the screws are inserted through the holes in face 7b.

Near the top of the bracket, the metal of face 7a is folded laterally and back on itself, as shown in Fig. I, to form a horizontal channel 7c; and then the metal is continued upwardly at 7d. A latch 7e (Figs. III and I) is pivoted to bracket portion 7d; and the pivot is so placed that the weight of the latch biases it downwardly as shown in Fig. III. The top and bottom sheet metal portions which form channel 7c are rectangularly pierced at 7f, 7f; and latch 7e has a nose 7g which normally rests in this rectangular aperture.

Integral with, or affixed to, the end of head-bar section 4 is a depending portion 4e (see Fig. I) which carries a horizontal portion 4f. Horizontal portion 4f is recessed at 4g (Figs. II and III) in registration with bracket apertures 7f. With brackets 7 fastened in place on each side of the window and head-bar 1 adjusted to the correct length, the head bar is mounted by simply inserting portions 4f into channels 7c. The entering end of bar portion 4f elevates latch nose 7g; and when the head-bar is in place, latch nose 7g automatically drops to the position shown in Fig. III and secures the head-bar in place. However by depressing thumb piece 7h, the latch is released and the head-bar can be readily removed.

Figs. VI through VIII

The structure is generally similar to the first form of the invention, but the telescoping head-bar has no intermediate sliding sections and the elevating pulleys are at fixed distances from the ends of the bar.

The head-bar, designated as a whole by 11, includes a center section 12 which has inturned edges 12a and is the same as section 2 in the first form of the invention. Telescoped in each end of the center section 12, is a sheet metal end section, designated as a whole by 14. End section 14 has edge portions 14a which make a sliding fit with the center section 12, and has a depressed center portion 14b. At the inner end of section 14, the edge portions 14a are removed and a locking member 14c is provided. Locking member 14c is pivoted at 14d to section 14 and is provided with cam shaped locking shoes 14e, 14e. Also pivoted to section 14 is a cam 14f which may be moved by lever 14g to oscillate locking member 14c on its pivot 14d. When lever 14g is moved in the direction of the arrow, shoes 14c are forced into locking engagement with center section 12, thereby maintaining the head-bar at its adjusted length.

Riveted or otherwise secured to the under side of section 14 are L-shaped brackets 14h, 14h on which is mounted a double elevating pulley 14i. Attached to telescoping section 14 near its outer end is a cord lock, designated as a whole by 18. This cord lock may be of any suitable type, but the one shown will now be described briefly.

A sheet metal shell 18a houses a pivoted dog 18b which has a depending serrated nose 18c. In an installed blind, the elevating cord passes downwardly through shell 18a; and when the cord is swung to the left, it engages nose 18c. Then upward movement of the cord carries the dog 18b upward, and the free end of the dog wedges the cord against recess 18d in shell 18a. The shell 18a is attached to and supported by a depending member 18e which also is adapted to support one end of the tilt bar of the blind (not shown). The end of the tilt bar has a projecting pin which is moved sidewise into a suitable slot provided in member 18e. This slot runs from front to back and has a downwardly inclined entrance, the mouth of which appears at 18f. A lever 18g is pivoted at 18h and has a thumb piece 18i; and the opposite end 18j of the lever is arranged so that it may be moved across the mouth 18f of the slot to prevent accidental removal of the tilt-bar pin from the slot. A more complete description of this cord lock element 18 is given in my Patent 2,075,214, dated March 30, 1937.

The outer end of head-bar section 14 is provided with a member that interfits with a supporting bracket 17. This end of the head-bar and the bracket 17 are respectively identical with the bar end and bracket 7 in Figs. I, II and III, except that the construction shown in Figs. I to III is left hand, while the construction shown in Figs. VI and VII is right-hand. Accordingly, detailed description of this construction is omitted to avoid unnecessary repetition.

The head-bar may be fabricated and assembled at the factory on a quantity production basis. The installer of the blind secures to the window frame a pair of brackets such as bracket 7. Then, after adjusting the head bar to proper length, he inserts the head-bar into the brackets, and inserts the tilt bar of the slat assembly into the slots at 6g (Fig. I) and 18f (Fig. II). Cords C and C1 (Figs. VI and I) for elevating the blind are passed over the elevating pulleys and threaded through the cord lock, as is well understood in the art. A cord is also supplied to pulley 6b for tilting the blind. While the structure has been described as having the tilting mechanism on the left side and the cord lock on the right side, it will be

obvious that their positions may be interchanged. When the head-bar is mounted inside of a window frame, additional supporting screws may, if desired be inserted through holes P (Figs. II and VII).

In compliance with the patent statutes, I have disclosed the best forms in which I have contemplated applying my invention, but it will be understood that the disclosed forms are merely specific illustrative embodiments which do not limit the scope of the invention.

What I claim is:

1. In a Venetian blind, a sheet metal supporting bracket having an elongated horizontal channel which extends perpendicular to the plane of the window and faces away from the center of the window, and a head-bar having U-shaped sheet metal end to enter the channel for support of the head-bar by the bracket.

2. In a Venetian blind, a sheet metal supporting bracket having an elongated horizontal channel which extends perpendicular to the plane of the window and faces away from the center of the window, the upper branch of the channel having an opening therein, and the bracket having a latch which enters said opening; and a head-bar having a U-shaped sheet metal end to enter the channel for support of the head-bar by the bracket, said metal end having a formation to receive said latch whereby the head-bar is latched to the bracket.

3. In a Venetian blind, a sheet metal supporting bracket having an elongated horizontal channel which extends perependicular to the plane of the window, the top side of the channel having a cut-away portion, and the bracket having a pivoted latch positioned above the channel and provided with a locking end entering said cut-away portion of the channel; and a head-bar having a sheet metal end to enter the channel for support of the head-bar by the bracket, said metal end having a formation to receive said latch whereby the head-bar is latched to the bracket.

4. In a Venetian blind, a sheet metal supporting bracket having an elongated horizontal channel which extends perpendicular to the plane of the window, the top side of the channel having a cut-away portion, and the bracket having a downwardly biased latch positioned above the channel and provided with a locking nose removably entering said cut-away portion of the channel; and a head-bar having a sheet metal end to enter the channel for support of the head-bar by the bracket, said metal end having a formation to receive said latch nose whereby the head-bar is latched to the bracket.

5. In a Venetian blind, a sheet metal supporting bracket having a vertical leg from which metal is folded and forms an elongated horizontal channel which extends perpendicular to the plane of the window and faces away from the center of the window, and a head-bar having a U-shaped sheet metal end to enter the channel for support of the head-bar by the bracket.

6. An extensible Venetian blind head-bar comprising: an elongated sheet metal section having inturned longitudinal edges, a second elongated sheet metal section telescoped within the first section, shiftable locking means carried by said second section, and means to shift said locking means into engagement with the edges of the first section to thereby lock the two sections in adjusted telescopic relation.

7. An extensible Venetian blind head-bar comprising: an elongated sheet metal section having a body portion and side portions, a second elongated sheet metal section telescoped within the first section, rockable locking means carried by said second section, and means to rock said locking means into engagement with at least one of said side portions to lock the two sections in adjusted telescopic relation.

HANS K. LORENTZEN.