

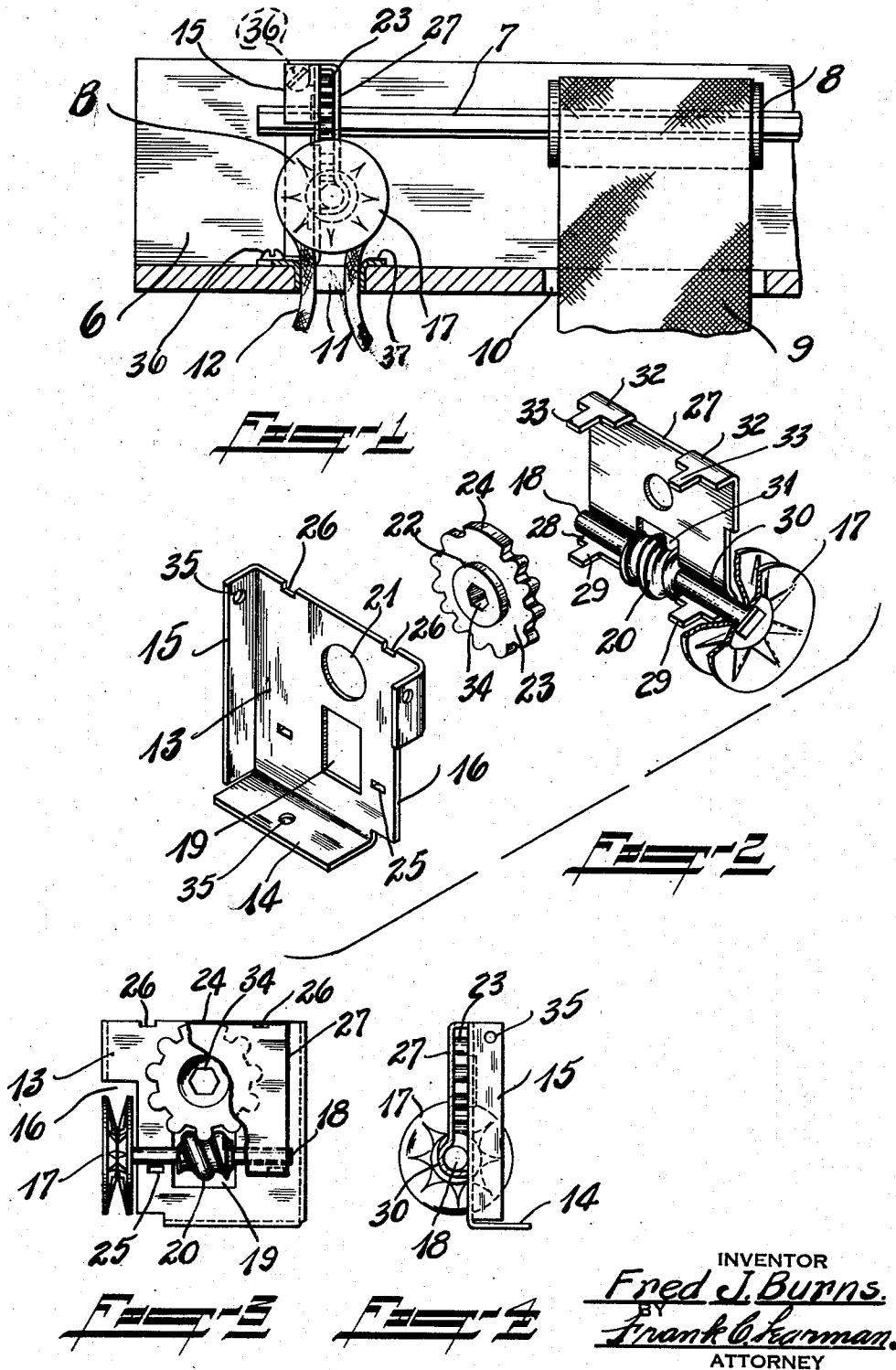
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VENETIAN BLIND TILTING MECHANISM

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VENETIAN BLIND TILTING MECHANISM

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5 Claims. (Cl. 156—17)

This invention relates generally to Venetian blinds, and more particularly to the tilting mechanism for tilting the blind slats to control admission of light and air currents through the opening in which the blind is hung.

One of the prime objects of the invention is to design a tilt mechanism assembly preferably formed of stampings to simplify the assembly and to facilitate the securing of the various parts in assembled relation.

Another object is to provide a tilt mechanism mounting and assembly including spaced members which provide a bearing for the tilt gear and worm shaft respectively, so that it can be easily and quickly mounted in position on the blind.

A further object is the provision of a tilt mechanism and assembly comprising a minimum number of parts of simple and substantial construction which are firmly held in rigid, accurate relation, and which require a minimum of labor and expense to assemble and mount.

A still further object is to design a tilt mechanism assembly which can be assembled and riveted together as a complete unit on a bench, so that the unit can be easily and quickly mounted in the head box of the blind.

These and other objects will appear as the specification proceeds, and it will be obvious that modifications may be made in the structure here-described without departing from the spirit thereof, or the scope of the appended claims.

In the drawing:

Fig. 1 is a fragmentary, part sectional, front elevational view of a Venetian blind head box showing my tilting unit mounted therein.

Fig. 2 is a detail, perspective view showing the various parts which make up the unit and their relationship.

Fig. 3 is an end elevational view of the unit, part of the bearing plate being broken away to more clearly show the assembly.

Fig. 4 is a rear end, elevational view.

Referring now more particularly to the drawing in which I have shown the preferred embodiment of my invention, the numeral 6 indicates the conventional head box of a Venetian blind in which my tilting unit "B" is mounted. A tilt shaft 7 is mounted in the head box 6 as usual and enlarged drums 8 are provided on said shaft and to which the ladder tapes 9 are attached in the conventional manner, openings 10 being provided in the bottom wall of the head box to accommodate said tape, and a similar opening 11 is provided adjacent the end of the head box to accommodate the tilt cord 12 which

hangs from the box within easy reach of an operator, and by means of which the slats of the blind (not shown) are tilted.

The tilt assembly comprises a bracket member 13 preferably in the form of a stamping, the lower and back edges 14 and 15 respectively being bent at right angles to the main body, and the forward edge is recessed as at 16 to accommodate and provide clearance for the grooved sheave 17 which is mounted on the worm shaft 18.

A rectangular-shaped opening 19 is provided in the wall of the bracket 13 as shown and provides clearance for the worm member 20 which is mounted on the worm shaft 18, and a circular opening 21 of predetermined size is provided in said bracket directly above the opening 19, and is of a size to accommodate and form a bearing for the hub 22 of the toothed gear 23, the rim of said gear being provided with a blank segment 24 which serves as a stop to limit the tilting action of the blind.

Spaced apart openings 25 are provided in the vertical wall of the bracket 13 and notches 26 are provided in the upper wall thereof and for a purpose to be presently described.

A companion plate 27 is mounted on the bracket 13 and forms a part of the assembly "B", the lower end of said plate being bent at right angles to the main body as indicated at 28 and terminates in spaced apart pilot sections 29 which register with and are accommodated in the openings 25, the section immediately adjacent the end 28 being rounded as at 30 to provide a bearing for the shaft 18, and the plate is further recessed at 31 to accommodate and provide clearance for the worm 20 as well as preventing endwise movement thereof.

The upper end of the plate 27 is turned as at 32 and terminates in pilot sections 33 which snugly fit the recesses 26 provided in the upper edge of the bracket 13, and when this plate is mounted on said bracket, it will be held in spaced relation therewith, the ends of the pilot projections being riveted over to hold the parts in assembled position.

The gear 23 is interposed between the adjacent walls of the plates 13 and 27 respectively, with the hub 22 mounted in the opening 29 so that it freely rotates therein, the teeth of said gear meshing with said worm.

A centrally disposed double D-shaped bore 34 is provided in the gear 22 and accommodates the end of the tilt shaft 7 which is removably mounted therein, and it will be obvious that when this unit is assembled and mounted in the

head box, that the tilt cord 12 can be actuated for imparting motion to the shaft 7 to tilt the blind slats accordingly.

Suitable openings 35 are provided in the flanges 14 and 15, and screws 36 serve to secure the bracket in position, and the tilt shaft can be readily inserted or removed by moving it endwise in the head box.

I also wish to direct attention to the fact that the tilt cord opening 11 is smaller than the diameter of the sheave 17, thus causing a snubbing action of the cord around the sheave and minimizing cord slippage. This opening is lined with a metal grommet 37 to prevent undue wear on the cord.

The assembly is very simple, practical, and economical, the parts are accurately mounted and can be assembled on a bench, thus saving considerable time.

From the foregoing description, it will be seen that there is provided a simple and efficient tilting mechanism assembly for venetian blinds which is compact, sturdy, foolproof, and inexpensive, and which possesses many desirable features of construction and operation.

What I claim is:

1. In a Venetian blind tilting mechanism, comprising a bracket plate, a gear journaled thereon, a companion plate mounted thereon and in spaced relation therewith with its lower end shaped to form a bearing for a worm shaft, a worm mounted on said shaft, a gear interposed between said plates and meshing with said worm, and a grooved sheave on the end of said worm shaft and adapted to accommodate a tilt cord.

2. In a Venetian blind tilting mechanism, comprising a flanged bracket plate, a companion plate mounted thereon and in spaced relation therewith, the lower end of said companion plate being shaped to form bearings, a gear interposed between and journaled on one of said plates, a worm shaft journaled in said bearings, a worm mounted thereon, and openings in said plates to accommodate said worm, and a sheave on the

end of said worm shaft and adapted to accommodate a tilt cord for operating said tilting assembly.

3. In a Venetian blind tilting mechanism, comprising a flanged bracket plate having an opening thereon, a gear mounted thereon and provided with a hub adapted to be journaled in said opening, a companion plate mounted on the bracket plate and in spaced relation therewith, the lower end of said plate being adapted to form a bearing, a worm shaft journaled in said bearing, a worm thereon and meshing with said gear, openings in said plates for accommodating and providing clearance for said worm, a grooved sheave on the one end of the shaft, and means for securing the plates in accurate spaced relation.

4. In a Venetian blind tilting mechanism, comprising a pair of stamped plates secured together in spaced relation with the lower end of one plate shaped to form a bearing, a worm shaft journaled therein, a worm mounted on said shaft, openings in said plates to accommodate said worm, an opening in the one plate above said first mentioned openings, a gear interposed between said plates and provided with a hub journaled in said opening, said gear meshing with said worm, a centrally disposed bore in said gear, a shaft removably mounted in said bore, and a sheave on the end of said shaft.

5. In a Venetian blind tilting mechanism, comprising a bracket plate, a gear journaled on said plate, a companion plate, openings in said bracket plate, horizontally disposed pilot sections on said companion plate for insertion in said openings to secure said plates in assembled relation, bearings formed on the lower edge of the companion plate, a worm and worm shaft assembly journaled in said bearings and meshing with said gear, and a sheave on the end of said worm shaft to accommodate a tilt cord for operation of said worm and gear.

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