

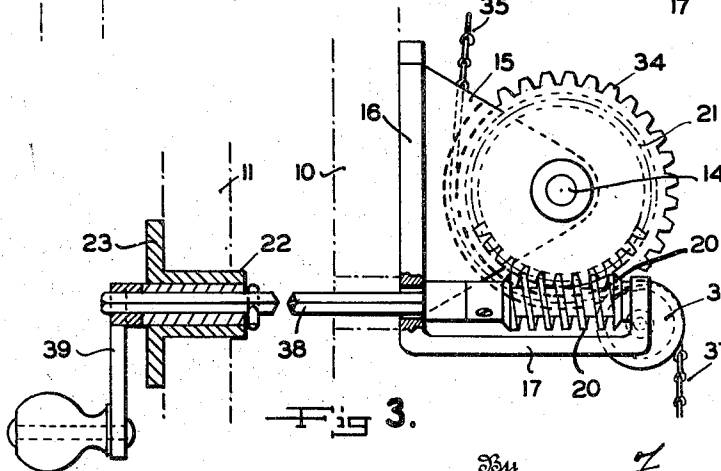
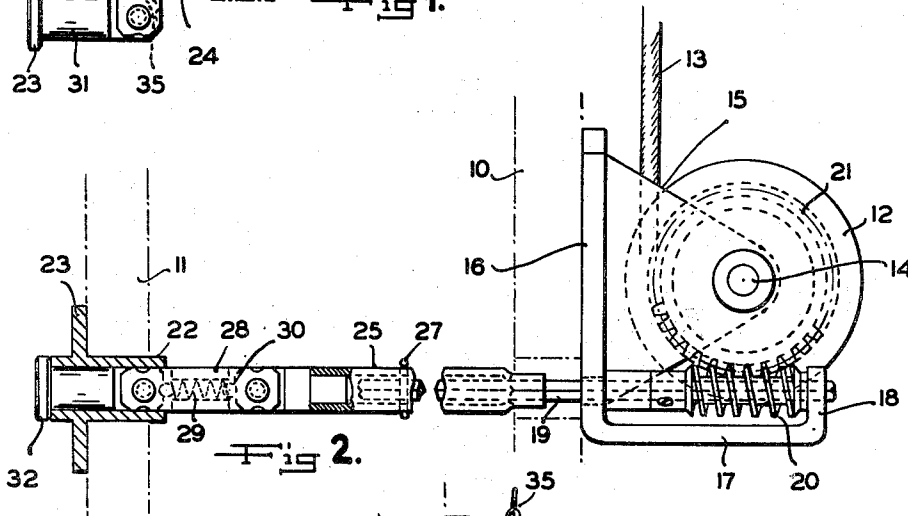
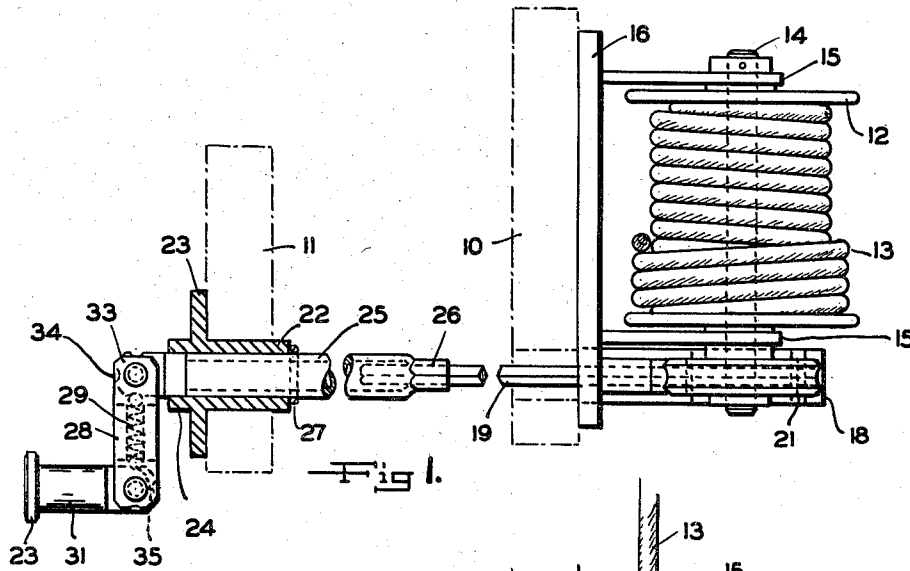
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AWNING OPERATOR

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AWNING OPERATOR

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This invention relates to mechanical apparatus for raising and lowering conventional window awnings and the primary object of the invention is the provision of a simple yet dependable assembly operable from inside the window for raising and lowering the awning and which does not require any modification of existing and/or conventional awning structures for its application. The most commonly used window awning is a sewn canvas canopy-like device which is fastened along its upper edge to the window frame or trim in a more or less permanent manner and which has at least its lower and outer edge secured to the outer reach of a U-shaped bracket which is pivotally secured to the sides or jambs of the window at points spaced downwardly from the top of the window. To raise the awning it is common practice to employ a rope or cord and a system of pulleys so that by simply pulling downward on a length of cord the frame referred to is pivoted upwardly against the building thus raising the awning. The present invention provides an improved and materially simplified device for taking up and paying out the awning operating cord whereby the awning may be readily raised and lowered by manipulation of an element inside the building.

A further object of the invention is the provision, in apparatus of the general character outlined above of an improved operating lever or crank which may be permanently attached to the assembly and which yet may be readily moved to an inconspicuous recessed position in the window frame when not in use.

Another object of the invention is the provision of an improved ladder-chain arrangement for raising and lowering the pivoted skirt frame of a cloth awning.

The above and other objects and advantages of the invention will become apparent upon consideration of the following detailed specification and the accompanying drawing wherein there is disclosed certain preferred embodiments of the invention.

In the drawing:

Figure 1 is a plan view, partly in section of an awning operator constructed in accordance with the principles of the invention;

Figure 2 is a side elevation, partly in section, of the assembly of Figure 1; and

Figure 3 is a plan view, partly in section, of a modified form of awning operator constructed in accordance with the principles of the invention.

Referring now to the drawing in detail and more particularly to Figures 1 and 2 thereof the

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reference numeral 10 designates an exterior trim board of a conventional window frame while the reference numeral 11 designates an interior trim board of the window frame assembly and, as is well known, the space intermediate these trim members is commonly taken up by the jamb of the window frame. In some instances this jamb may be of box-like construction to accommodate counterweights if the latter are used in the assembly. In either construction it is entirely practicable to drill a hole entirely through the jamb and trim boards from the interior to the exterior of the building and in accordance with my invention such an aperture is utilized to accommodate an operating shaft for the awning operating device whereby the awning may be raised and lowered by a person standing inside the building. The manner and apparatus in and by which this is accomplished will now be described in detail.

In the embodiment of Figures 1 and 2 I provide a reel 12 to receive the awning-operating cord 13 and, as shown, the reel 12 is fixed on a shaft 14 journaled in brackets 15 extending outwardly from a base plate 16 which in turn is rigidly secured to the board 10 by means of wood screws or the like, not shown. The plate 16 may be provided with an integral tab which is bent forwardly at 17 and upwardly at 18 to provide an outboard bearing mount for a shaft 19 mounting a worm 20. Shaft 19 is also journaled in an aperture formed in the base portion of the member 16 in alignment with the bearing aperture formed in upturned portion 18 of the member 16 and the shaft 19 is provided with an elongated squared portion projecting a considerable distance inwardly of the base member 16 into the aperture in the window frame jamb described above. Meshing with the worm 20 is a worm wheel 21 which is keyed onto the shaft 14 and it should be apparent that upon rotation of the shaft 19 the drum 12 will be rotated at a reduced speed to take up or pay out the cord 13, depending on the direction of rotation of the shaft 19. The gears 20 and 21 are preferably die-cast products and, if desired, they may be enclosed in a suitable housing although this is not completely necessary due to the weather resistant nature of various metals most suitable for die-casting. Likewise, the other exposed parts of the assembly are preferably formed of suitable corrosion resistant metal by die-casting or other economical production methods.

Secured in the aperture in the trim board 11 is a sleeve 22 having an integral flange 23 overlying the interior face of the board 11 and a short in-

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wardly projecting portion 24. Rotatably and slidably mounted in the sleeve 22 is a tubular member 24 having a reduced and squared inner end portion 26 to slidably receive the squared projection of the shaft 19. To limit the inward sliding movement of the tubular member 25 a ring 27 is brazed or welded to its outer periphery for engagement with the inner end of the sleeve 22 as shown in Figure 1.

Pivotally secured to the end of member 25 opposite the portion 26 is a crank arm 28 having a longitudinal bore passing through it from end to end to receive a coil spring 29 and the two steel balls 30. Pivotally connected to the free end of crank arm 28 is a handle 31 having an end enlargement 32 and the diameters of the arm 28 and handle 31 are generally commensurate with the diameter of the tubular member 25. Further, the axes of pivotal interengagements of the arm 28 with the tubular member 25 and the handle 31 are parallel so that these three parts may be relatively oriented as shown in Figure 1 to form a crank handle to rotate the member 25 and consequently the shaft 19 or alternatively, so that these three parts may be pivoted into alignment with each other and slid longitudinally through the sleeve 22 as shown in Figure 2. To assist in maintaining these three parts in either of their alternative relative positions there is provided on the end of member 25 a block 33 having indentations 34 spaced 90° apart and adapted to be engaged by one of the two spring-pressed steel balls 30. A similar block 35 is provided on the end of handle 31 opposite enlargement 32 for co-action with the other of the two spring-pressed steel balls 30. The enlargement 23 on the handle 31 not only limits the inward sliding movement of the collapsible crank assembly but also provides a convenient thumbhold for the withdrawal of the collapsed crank from its recessed position in the sleeve 22 when it is desired to utilize the awning operator.

By referring to Figure 1 it will be apparent that with the parts positioned as shown, rotation of the crank comprised of the members 28 and 31 will drive the shaft 19 and also the reel 12 by reason of the squared interconnection between shaft 19 and the member 25. Thus the awning to which the operating core 13 is attached may be readily raised or lowered from inside the building and this is true regardless of whether or not the window sash is open. Upon completion of the desired manipulation the crank may be straightened out or collapsed by pivoting the arm 28 into alignment with the member 25 and the member 31 into alignment with the member 28 after which the collapsed or straightened assembly may be slid through the sleeve 22 until the enlargement 32 engages the projection 24. This longitudinal movement of the collapsed crank assembly is made possible, of course, by the sliding interconnection between the shaft 19 and the member 25. With the parts recessed as shown in Figure 2 of the drawing only the enlargement 32 and the flange 23 of the sleeve 22 is visible from the inside of the building and this appears simply as a decorative button.

In the embodiment of the invention shown in Figure 3 a sprocket wheel 34 and a ladder-type of chain 35 in mesh therewith replace the reel 12 and cord 13 of the embodiment of Figure 1. To maintain the chain in mesh with a considerable portion of the periphery of the sprocket 34 I provide a pulley 36 which is journaled in suitable lugs, not shown, formed integral with and pro-

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jecting outwardly from the bottom edge of the base plate 16 for rotation about an axis generally parallel with the axis of rotation of the shaft 14. As shown, the pulley 36 is positioned forwardly of the axis of the sprocket 34 while the chain reach extending upwardly from the sprocket 34 is on the back face of the sprocket. It will be understood that the upward extension of the chain is entrained over a pulley mounted at the head of the window and thence extended to engage the outer bar of the U-shaped awning frame. Alternatively, the chain may extend upwardly to connect with the awning cord only a sufficient distance to enable the travel of the chain over the sprocket 34 to raise and lower the awning its full extent. Thus, upward movement of the chain 35 lowers the awning while downward movement of the chain raises the awning. The excess chain which accrues upon raising of the awning may be housed in a suitable enclosure positioned below the pulley 36 or it may simply be allowed to dangle as at 37.

To rotate the sprocket 34 I preferably utilize the worm wheel 21 and the worm 20 as in the case of the embodiment first described, but in the specific device illustrated in Figure 3 somewhat longer shaft 38 is employed to mount and drive the worm 20. This shaft 38 is of sufficient length to extend entirely through the sleeve 22 thus providing an interior projection for reception of a conventional crank handle 39. As shown, the shaft 38 is preferably square in cross-section and, of course, the mounting aperture in the crank 39 is likewise of square contour so that an effective driving interconnection is established simply by slipping the crank handle onto the inwardly projecting end of the shaft 38. The crank 39 is loosely mounted on the end of the shaft 38 so that it may be readily removed when desired. It should be understood, however, that the collapsible crank assembly of the embodiment of Figures 1 and 2 may as well be employed in place of a more conventional operating arrangement of Figure 3.

It should now be apparent that I have provided improved mechanical apparatus for raising and lowering conventional window awnings which accomplishes the objects initially set out. The apparatus of the invention is simple in design, economical to produce, and readily applicable to existing and/or conventional window frames and awning structures. Further, the invention provides practicable arrangements for operating the awnings from inside the buildings while yet providing for the recessing or removal of the interior operating apparatus whereby the architectural beauty of the interior of the building structures is not interfered with. The above specifically described embodiments of the invention, however, should be considered as illustrative only as obviously many changes may be made therein without departing from the spirit or scope of the invention. Reference should therefore be had to the appended claims in determining the scope of the invention.

What I claim is:

1. In an awning operator a base adapted to be secured to the exterior of a building, a drum journaled on said base and adapted to receive an awning operating cord, a shaft adapted to be extended from the exterior to the interior of said building and operatively connected with said drum whereby rotation of said shaft causes said drum to rotate, said shaft having a telescoping section, a sleeve adapted to slideably and rotatably receive

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the inner end portion of said shaft, and a collapsible crank on the inner end of said inner portion of said shaft operative when collapsed to be slideably received in said sleeve, said shaft comprising a squared rod member and a tubular member for slideably receiving said rod member, at least a portion of said tubular member being squared complementary to said rod member whereby upon rotation of said tubular member said rod member will be rotated.

2. In an awning operator a base adapted to be secured to the exterior of a building, a drum journaled on said base and adapted to receive an awning operating cord, a shaft adapted to be extended from the exterior to the interior of said building and operatively connected with said drum whereby rotation of said shaft causes said drum to rotate, said shaft having a telescoping section, a sleeve adapted to slideably and rotatably receive the inner end portion of said shaft, and a collapsible crank on the inner end of said inner portion of said shaft operative when collapsed to be slideably received in said sleeve, said collapsible crank comprising a crank arm pivotally connected to the inner end of said inner portion of said shaft for pivotal movement from a position in alignment with said shaft to a position extending normal to said shaft, and a handle pivotally connected to the free end of said arm and movable from a position in alignment therewith to a position normal thereto and vice versa.

3. In an awning operator having a driven member adapted to be positioned exteriorly of a building the combination of a driving shaft adapted to extend through the exterior building walls, said driving shaft having a telescoping section, a sleeve adapted to be inserted in said wall from the interior of said building for slideably and rotatably receiving the inner portion of said driving shaft, a collapsible crank secured to the inner end of said shaft and comprising a crank arm pivotally connected with said shaft for movement from a

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position in alignment with said shaft to a position normal thereto and vice versa, and a handle pivotally connected to the free end of said arm for movement from a position in alignment therewith to a position normal thereto and vice versa, the arrangement being such that upon said shaft being extended and said shaft arm and handle normally related an operating crank is provided while upon said shaft arm and handle being in alignment the thus collapsed crank is slideably received in said sleeve upon telescoping of said shaft.

4. Apparatus according to claim 3 further including spring detent means to yieldably retain said shaft arm and handle in either aligned or normally related positions.

5. Apparatus according to claim 3 further including a flange on said sleeve for overlying an interior surface of said wall, said sleeve being formed with a projection extending inwardly from said flange, said handle having an enlargement at its inner end to overlie the inner end of said projection upon said crank being collapsed and recessed in said wall.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
124,050	Gathmann	Feb. 27, 1872
262,627	Souther	Aug. 15, 1882
510,881	Bennett	Dec. 19, 1893
888,612	Hovendick	May 26, 1908
1,304,867	Floyd	May 27, 1919
1,682,205	Wassener	Aug. 28, 1928
1,701,221	Bartlett	Feb. 5, 1929

FOREIGN PATENTS

Number	Country	Date
388,688	Great Britain	Mar. 2, 1933