Feb. 18, 1941. F. A. ANTON 2,232,157

ADJUSTABLE DRIVE AND CHECK MECHANISM FOR AWNING ROLLERS

Filed Oct. 26, 1939 2 Sheets-Sheet 1

Fig. 1.

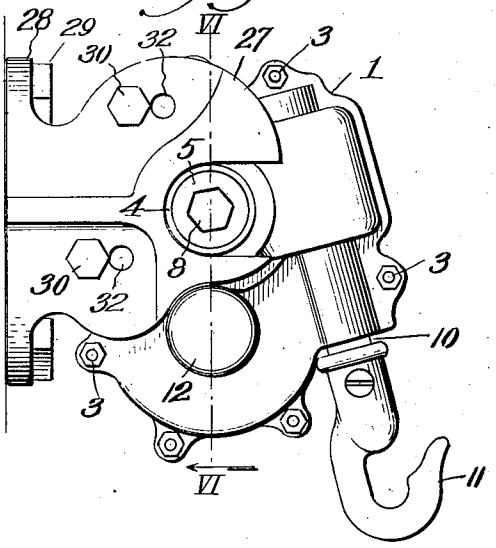


Fig. 2.

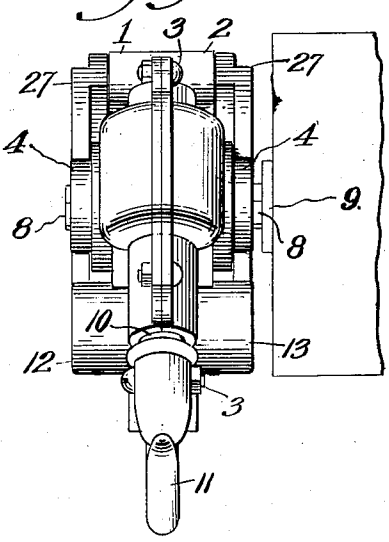


Fig. 3.

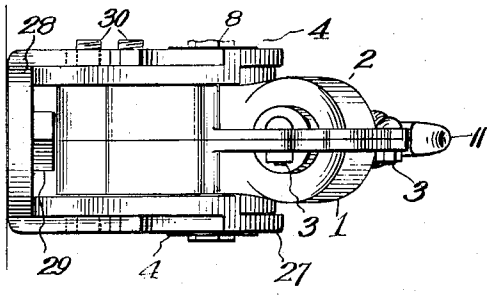
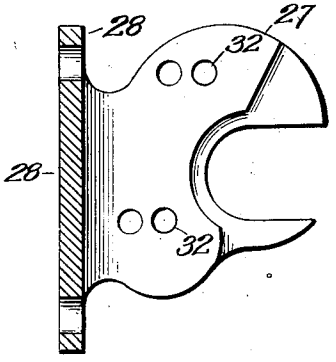


Fig. 4.



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Filed Oct. 26, 1939 2 Sheets-Sheet 2

Fig. 5.

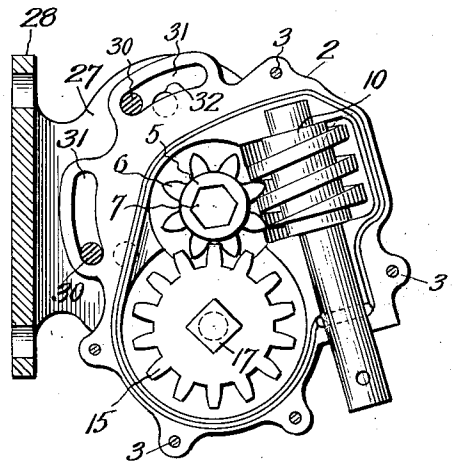


Fig. 6.

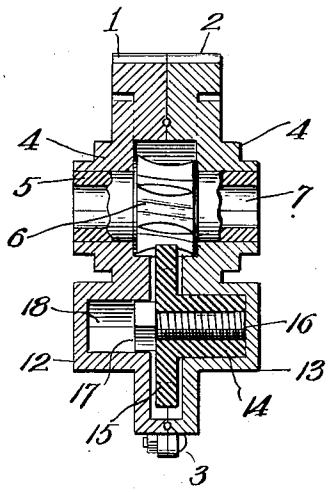


Fig. 7.

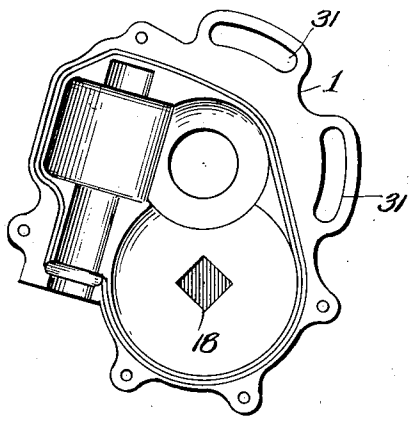
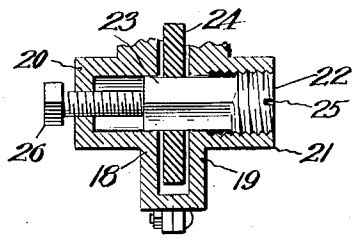


Fig. 8.



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UNITED STATES PATENT OFFICE

2,232,157

ADJUSTABLE DRIVE AND CHECK MECHANISM FOR AWNING ROLLERS

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Application October 26, 1939, Serial No. 301,361

14 Claims. (Cl. 156—44)

This invention relates to roller awnings and has for one of its objects to provide a roller awning driving gear mechanism which incorporates an awning check for limiting the unrolling of the awning to make it impossible to unwind the awning to such a degree that it can be accidentally or carelessly wound up in the wrong direction.

Another object of the invention is to provide roller operating mechanism which is adapted for use at either the right or left hand ends of an awning roller, or intermediate a pair of such rollers, and which is adjustable not only to accommodate various distances of projection from an awning box or transom bar, but is also adjustably or rockingly mounted so that the angle of the manually actuated operating shaft may be placed in position to suit any peculiar condition surrounding the point of installation.

A further object of the invention is to produce a construction of the character mentioned in which the range or degree of rotation of the awning roller may be adjusted to suit the width or spread of the awning when open.

A still further object of the invention is to produce a device of the character mentioned which is of strong, durable, efficient and inexpensive construction; and in order that it may be fully understood, reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of an awning mechanism involving the invention.

Figure 2 is a front view of the same and of part of the awning.

Figure 3 is a top plan view of the device.

Figure 4 is a vertical section through the wall bracket used to rockingly support the gear housing.

Figure 5 is a view of the interior of the construction as shown in Figure 1, the near half of the housing being omitted, and the wall bracket being shown in section.

Figure 6 is a section on the line VI—VI of Figure 1.

Figure 7 is an inside view of the near half of the housing section omitted from Figure 5.

Figure 8 is a detail sectional view of a modified form of check mechanism.

In the said drawings, where like reference characters identify corresponding parts in all of the figures, 1 and 2 respectively indicate complementary halves of a housing member which are adapted to be secured together as a unit by means of securing bolts 3. The housing members are provided with aligned openings externally reinforced by circular bosses 4, which as hereinafter appear, form internal journals for the support of the roller operating and supporting shaft, and external journals for the rocking mounting of the housing in a wall bracket so that said housing can be selectively positioned around the axis of an awning roller.

Journaled within the bosses 4 are the opposite ends of an operating shaft 5 which provides a bearing support for an awning roller as will hereinafter appear, and keyed or otherwise non-rotatably secured on or formed integrally with and intermediate the ends of, said shaft, is an operating gear wheel 6. The shaft 5 may have an angular bore or passageway 7 to receive the end of trunnions 8 or the like carrying an awning roller 9, or said shaft 5 may project into an awning roller, if desired. It will be evident that the construction is adapted to drive an awning roller from either end, or may drive a pair of oppositely extending awning rollers from an intermediate point. Journaled in the front end of the housing 1—2 is a worm shaft 10, each housing member being formed with oppositely-bowed cylindrical portions to provide bearings for the worm shaft. The shaft 10 projects downwardly through the housing at one end where it may be provided with a hook 11 or the like, for detachably engaging a manually operated crank member or handle, not shown. With the construction as described it will be evident that rotation of the shaft 5, effected through rotation of the worm shaft 10, will operate the awning roller in either direction.

In order to check the rotation of the awning roller, the housing members 1—2, below their bosses 4 are respectively formed with alined sockets 12 and 13. In the form of construction shown, the socket 13 forms a journal for a hollow stub shaft 14, formed integrally with a gear wheel 15 enmeshed with the gear wheel 6. The internal bore of the gear and shaft 14—15 is threaded for reception of a threaded bolt 16, having an angular head 17 non-rotatably received in an angular passageway 18 formed in the socket 12. With this construction, it will be evident that on rotation of the gear wheel 15, the bolt 16 will be translated according to the direction of rotation, until the head 17 comes into clamping abutting engagement with either the gear wheel 15 as shown in Figure 6, or with the closed end of the socket 12. By this arrangement the rotation of the awning roller is prevented or checked by locking the gears against further rotation, it being possible to limit the

travel of the bolt 16 in one direction by selective disposition of the same in its threaded relation to the shaft 14 prior to the assembly of the parts, in accordance with the spread or width of the awning fabric to be unrolled.

Where it is desired to have means to adjustably limit the travel of the bolt for accessibility exteriorly of the housing, the form of construction shown in Figure 8 may be adopted. In this construction the two halves of the housing 18 and 19 are respectively provided with alined bosses 20 and 21. The boss 21 has an open end and is internally threaded to receive a threaded extremity of a bolt 22 having an angular portion 23 slidingly extending through a corresponding axial opening in a gear wheel 24. The end of bolt 22 is provided with a slot 25 for manual positioning adjustment. The other boss or socket 20 is provided with a threaded adjustable set screw 26 threaded through the closed end of the socket. On rotation of the bolt or shaft 22, the stop or check bolt 23 travels back and forth through the gear 24, movement in one direction being limited by contact with the end of the adjustable set screw 26.

To meet modern installation requirements, such as awning boxes, transom bars and the like, it is desirable that the gear housing shall have a range of adjustment to place the operating hook 11 at the most convenient angle. Therefore, instead of forming the housing with securing ears for attachment to a building front, it is preferred to rockingly support the gear housing in a wall bracket so that said gear housing can be radially positioned around a prolongation of the axis of the awning roller, the bosses 4 being journaled in bifurcated extremities of a pair of spaced ears 27 projecting outwardly from the base plate 28 of the bracket. The base plate is adapted to be fixedly secured to the building front by means of bolts 29. The ears 27 are formed with registering perforations to receive clamping bolts 30, passing through clamping loops or slots 31 formed in the two halves of the housing 1 and 2. With this arrangement, on loosening of the clamping bolts, the housing may be rocked on the bosses 4 axially of the awning roller until the hook 11 assumes the desired angle. The housing may then be locked against accidental movement by manipulation of the clamping bolts. It will also be evident that by having a series or plurality of pairs of bolt-receiving openings 32 in the ears 27, it is possible to use one bracket casting for a plurality of different projections from the building wall. For example, in the construction shown, the openings 32 engaged by the clamping bolts 30 may give a 3½" projection. The other pair of openings as shown provide a 3" projection. Of course by properly designing the parts any other range of projection may be provided.

From the above description it will be apparent that although I have described and illustrated the preferred embodiment of the invention, it is to be understood that I reserve the right to all changes within the spirit of the claims and without the ambit of the prior art.

I claim:

1. In an awning roller operating mechanism, the combination of an awning roller, a gear for rotating said roller, a second gear wheel enmeshed with the first-named gear for turning therewith, a shaft engaging said second gear and interlocked therewith against independent movement, said shaft being translated longitudinally on rotation of said second gear, and means for limiting translation of the shaft.

2. In an awning roller operating mechanism, the combination of an awning roller, a gear for rotating said roller, a second gear enmeshed with the first-named gear for turning therewith, a shaft engaging the second gear and interlocked therewith against independent movement, said shaft being translated longitudinally on rotation of said second gear, and means for adjustably limiting translation of the shaft.

3. In roller awning operating mechanism, a housing having a pair of complementary sockets, a driven gear journaled in the housing and adapted to rotate an awning roller, a shaft having its opposite ends mounted in said sockets for limited longitudinal translation therein, and a second gear enmeshed with the first-named gear and axially receiving said shaft and interlocked therewith against independent movement whereby stopping of shaft movement locks said gears against rotation.

4. In roller awning operating mechanism, a housing having a pair of complementary sockets, a driven gear journaled in the housing and adapted to rotate an awning roller, a translatable shaft having its opposite ends received in said sockets and bearing a threaded relation to one socket, and a second gear enmeshed with the first-named gear and axially non-rotatably but slidably receiving said shaft, and means limiting translation of said shaft.

5. In a roller awning operating mechanism, a housing having a pair of complementary sockets, a driven gear journal in the housing and adapted to rotate an awning roller, a second gear enmeshed with the first-named gear and journaled in one of said sockets, and a translatable shaft having one end non-rotatably engaging the other socket and bearing a threaded relation to said second gear, and means limiting translation of the shaft.

6. In roller awning operating mechanism, a housing having a pair of complementary sockets, a driven gear journaled in the housing and adapted to rotate an awning roller, a translatable shaft having its opposite ends received in said sockets and bearing a threaded relation to one socket, a second gear enmeshed with the first-named gear and axially non-rotatably but slidably receiving said shaft, and stop means carried by the other socket for adjustably limiting translation of said shaft.

7. In a roller awning operating mechanism, the combination of a wall bracket, a housing having a pair of complementary external bosses rockingly supported in said bracket and being also formed with a pair of complementary sockets, a gear wheel journaled in said bosses and within the housing, a drive mechanism journaled within the housing for rotating said gear, a second gear in said housing, a shaft having its opposite ends in said complementary sockets and interlocked with the second gear against independent movement but translated longitudinally by rotation of said second gear, and means to limit translation of the shaft.

8. In roller awning mechanism, a wall bracket, a bearing housing carried by said wall bracket, an awning roller drive bearing journaled in the housing, means for imparting rotation to said awning roller drive bearing, and means for selectively positioning the housing in said bracket

around the axis of said awning roller drive bearing.

9. In roller awning mechanism, a wall bracket, a bearing housing carried by said wall bracket, a double ended awning roller drive bearing journaled in the housing and adapted to support one end of an awning roller on either side of the bearing, means for imparting rotation to said awning roller drive bearing, and means for selectively positioning the housing in said bracket around the axis of its said drive bearing.

10. In roller awning mechanism, a wall bracket, a pair of slotted ears forwardly projecting from said wall bracket, a housing having a pair of projecting studs rockingly received in said ear slots, an awning roller drive bearing journaled in the housing and axially alined with the axis of rocking movement of said housing, means for imparting rotation to the awning roller drive bearing, and means for locking the housing in selected position of rocking adjustment.

11. In roller awning mechanism, a wall bracket, a housing rockingly mounted in said bracket, an awning roller drive mechanism journaled in said bracket and having its axis coincidental with the axis of rocking movement of said housing, and means for imparting rotation to said awning roller drive mechanism.

12. In roller awning mechanism, a wall bracket, a housing rockingly mounted in said bracket, an awning roller drive mechanism journaled in said bracket and having its axis coincidental with the axis of rocking movement of said housing, means for imparting rotation to said awning roller drive mechanism, and means associated with the housing and independent of the wall bracket for limiting the rotation of said awning roller drive mechanism.

13. In an awning roller mechanism, the combination of a housing having a socketed portion, a gear journaled in the housing, an awning roller driven by said gear, a second gear in the housing enmeshed with the first-named gear, a shaft for the second gear axially alined with the housing socket, said shaft and second gear being interlocked against independent movement, and means within the socket coacting with said shaft to limit movement of the shaft to prevent further rotation of the enmeshed gears.

14. In a roller awning operating mechanism, the combination of an awning roller, a gear wheel for rotating said roller, a second gear wheel enmeshed with the first-named gear for turning therewith, a shaft engaging said second gear and interlocked therewith against independent movement, and means to limit movement of the shaft to prevent further rotation of the enmeshed gears.

FREDERICK A. ANTON.