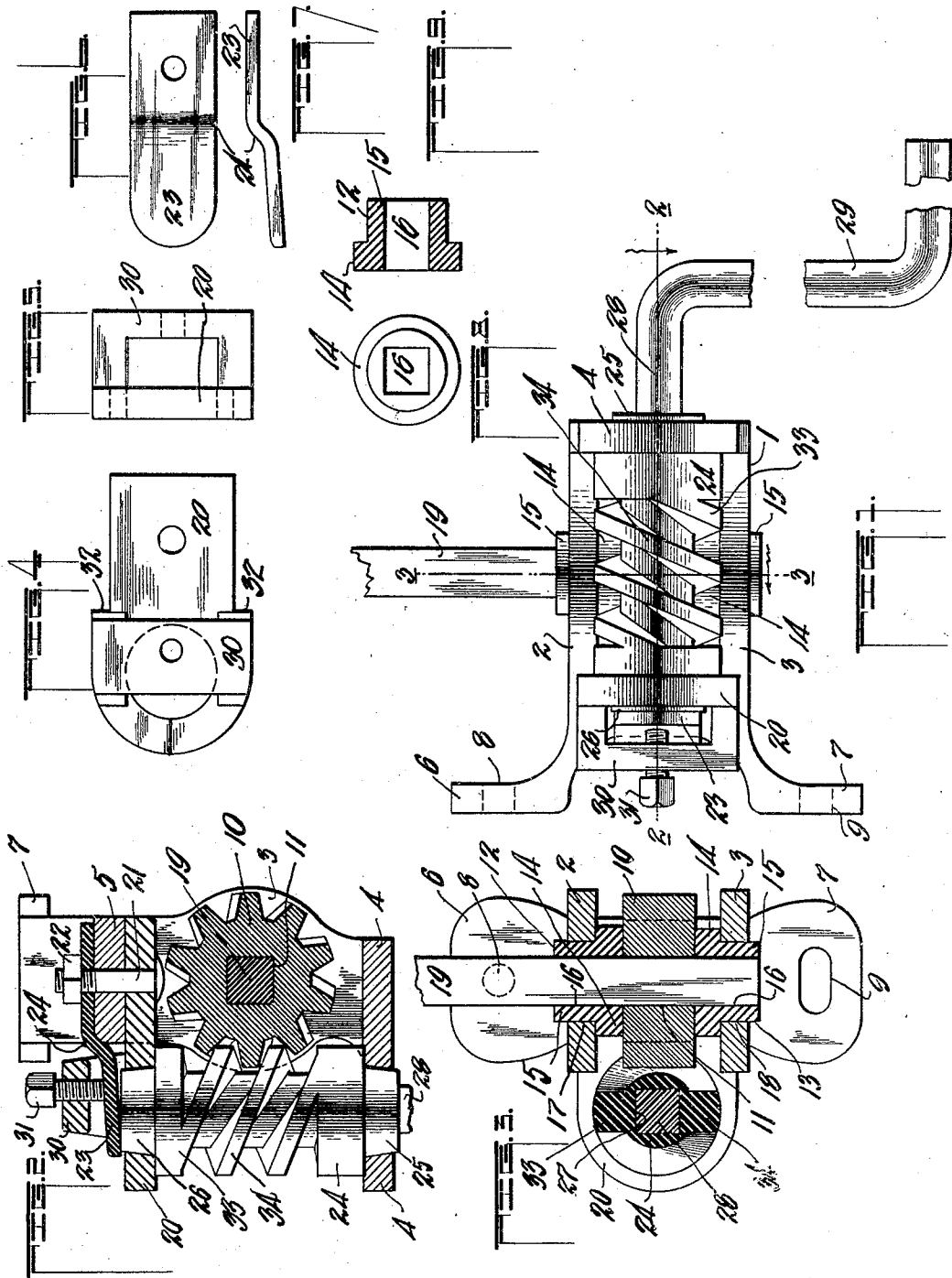


C. P. SESTER.
 AWNING ATTACHMENT.
 APPLICATION FILED MAR. 5, 1909.

946,827.

Patented Jan. 18, 1910.



Witnesses
 Miles C. Fuller
 J. A. Bishop

Charles P. Sester
 By Chas. W. LaPorte

UNITED STATES PATENT OFFICE.

CHARLES P. SESTER, OF PEORIA, ILLINOIS.

AWNING ATTACHMENT.

946,827.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES P. SESTER, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Awning Attachments; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to the operating mechanism for raising and lowering awnings, and has for its object to improve the mounting for one of the gears of the operating mechanism and the mode of connecting the operating shaft thereto; further, to improve the devices for frictionally holding one of said gears against rotation.

The present invention is an improvement upon the operating mechanism for raising and lowering awnings, shown and described in an application for patent filed by me on the 14th day of May, 1908, bearing Serial No. 432,942.

That the invention may be more fully understood, reference is had to the accompanying drawings, in which:—

Figure 1 is a side elevation of my improvements in operating mechanism for raising and lowering awnings, showing the operating shaft and crank for actuating the gears; Fig. 2 is a cross-section as the same would appear on the line 2—2 of Fig. 1, looking in the direction of the arrow shown in said figure; Fig. 3 is a cross section as the same would appear on the line 3—3 of Fig. 1, looking in the direction of the arrow shown in said figure; Fig. 4 is a face view of a bearing plate; Fig. 5 is an end view of the plate seen in Fig. 4; Fig. 6 is a face view of a spring bearing plate; Fig. 7 is an edge view of plate seen in Fig. 6; Fig. 8 is an end view of a collar, and Fig. 9 is a cross section of the collar seen in Fig. 8.

Like numerals of reference indicate corresponding parts throughout the figures.

1 denotes a bracket formed of the overlying yoke-portions 2 and 3 which are united at one end in the transverse bearing plate 4 and at their opposite ends are united in the supporting plate 5 from which extend outwardly, then upwardly and downwardly, the legs 6 and 7, by means of which the bracket may be attached securely to a wall

of a building or other place of attachment. In the leg 6 is an opening 8, while in the leg 7 is provided a transverse slot 9. When securing the bracket 1 to a wall or other suitable place of attachment, bolts are passed through the opening 8 in leg 6 and slot 9 in leg 7; the slot 9 being provided to allow the bracket to be adjusted and secure perfect alinement of the driving shaft, to be described, when the bracket may be securely fastened in place.

10 denotes a worm-wheel which is adapted to be carried in the bracket 1 between the overlying yoke-portions 2 and 3 thereof, and said wheel has the squared opening 11 there-through. I secure the worm-wheel 10 in operative position in the bracket 1, in the following manner: 12 and 13 denote similar collars, each having a flange 14, the reduced tubular portions 15 and the squared openings 16 extending through said collars, as shown. The tubular portion 15 of collar 12 is inserted through an opening 17 in the portion 2 of bracket 1 and the tubular portion 15 of the collar 13 is inserted through an opening 18 in the portion 3 of said bracket. When the collars 12 and 13 are in operative position, their flanges 14 are in juxtaposition to the lower and upper faces of the respective portions 2 and 3 of the bracket and between the collars there is just sufficient space to insert the worm-wheel 10, when the operating shaft 19, which is preferably squared, is inserted, first, through the square opening in collar 12, thence through the square opening in the wheel 10 and then passed through the squared opening in collar 13; in this way, a suitable bearing is provided for the lower end of shaft 19 and the wheel 10 is conveniently and securely retained in operative position in the bracket 1.

20 denotes a bearing plate, which is similar in outline to the transverse bearing plate 4, but instead of being united or formed integral with the portions 2 and 3 of the bracket, this bearing plate 20 is adapted to be detachably connected with the bracket 1, by being inserted between the portions 2 and 3, adjacent to the supporting plate 5, see Fig. 2, and is bolted to said plate, by a bolt 21, which is passed through the plates 20 and 5, with the threaded end of the bolt projecting through the plate 5, and before securing the bolt 21 in place by a nut 22, a friction bearing plate 23 is slipped over said

bolt, with the free end of the plate 23 extending out beyond one side of the plate 5 and bent inwardly at 24 to bring the outer portion thereof in proximity to the outer face of the bearing plate 20. The object of a detachable bearing plate, such as 20, and the friction bearing plate 23, will now be explained.

The worm-wheel 10 is operated by a worm 24, in mesh therewith, and this worm has reduced tapered hub portions 25 and 26 journaled respectively in the bearing plates 4 and 20 and the worm has a square opening 27 therethrough, whereby the shank 28 of a crank 29, may be inserted in said worm, when it is desired to operate the worm for transmitting motion to the shaft 19 through worm-wheel 10, for operating an awning roller which may be operatively connected with said shaft 19.

A worm and worm wheel of the usual construction and under ordinary conditions will form a lock of themselves without the aid of additional means for holding the same against rotation, but in the present instance, where the worm is provided with two threads, as will be described, the wheels will not become locked when released, hence it is necessary to employ suitable means for locking the wheels against rotation for holding the awning in whatever position it may be placed, raised or lowered. To do this, I employ what I have described as the friction bearing plate 23, which is preferably a spring plate adapted to engage and bear against the hub portion 26 of the worm 24, see Fig. 2. Under ordinary conditions and when used in connection with awnings of a given size, the bearing of the plate 23 against the hub of the worm is sufficient in itself to produce enough pressure to hold the worm against turning; but as the awnings increase in size, I have found that it is necessary to increase the frictional bearing of the plate 23 against the worm 24, to insure a proper holding of the worm. To do this, I provide the bearing plate 20 with a yoke-portion 30, see Figs. 2, 4 and 5 through which the engaging end of plate 23 is carried, and having a threaded engagement with the wall of said yoke-portion 30 is a set-screw 31 which may or may not be brought to bear with considerable force against the engaging end of plate 23 and thereby increase or decrease the frictional bearing of said plate 23 against the hub of the worm 24. It will be noted that the point of contact of the set-screw 31 with the plate 23 is to one side of the axial center of the worm 24, preferably to the side nearest the connection of the plate 23 to the bracket which, although the set-screw 31 may be brought to bear with considerable force against the plate 23, the end of the plate 23 will maintain a considerable degree of re-

siliency against the hub of the worm and not materially interfere with the manual operation of said worm. By the use of the friction bearing plate 23, not only does it perform the functions just described, but it also has a tendency to hold the worm projected one way, and it is well known that a worm will wear in one direction and become loose, but with the plate 23, such a condition is wholly obviated.

If the plate 20 was integral with the bracket 1, it would be impossible to place the worm 24 in position in said bracket, but by making the plate 20 detachable, the worm may have its hub portion 25 inserted in its bearing in the plate 4, when the plate 20 may be secured in place, in the position seen in the figure. To prevent oscillation of this plate 20 after it is secured in position, it is provided with the shoulders 32 which bear against the upper and lower portions 2 and 3 of the bracket 1.

It is not new to employ a worm and worm wheel for operating the roller of an awning, but I believe I am the first to employ a worm such as I show. This worm has two threads, which are indicated as 33 and 34. A worm with only one thread is very slow in its operation and for this reason undesirable, as one revolution of the worm will move only one tooth of the worm-wheel, but with a worm having two threads, two teeth of the worm-wheel are moved with each revolution of the worm and therefore produces a practical operating means and will operate as fast as is desirable in an apparatus of this character.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

1. In combination, a bracket having a yoke with overlying portions, a flanged collar having a bearing in the upper portion of the yoke, a flanged collar having a bearing in the lower portion of the yoke, and each of said collars having alined squared openings, a worm-wheel carried between the said collars, also having a squared opening, and a square shaft fitting in collars and wheel to unite the same.

2. In combination, a bracket having superimposed bearing plates respectively and in axial alinement with circular openings therein, spaced collars fitting in said plates, each collar having a tubular portion fitting the opening in the plate and provided with a flange lying in juxtaposition to said plate, a gear wheel interposed between said plates, and means for operatively uniting wheel and collars.

3. In combination, a yoke constituting a bracket, said yoke being formed with over and underlying portions and a bearing plate integral therewith, a gear wheel having a suitable bearing between the over and

underlying portions of said yoke, a bearing plate adapted to have a detachable connection with said bracket, a second gear wheel adapted to have a bearing between the
 5 bearing plate of the yoke and said detachable bearing plate and in mesh with said first mentioned gear, a friction bearing plate bearing against one end of said second gear, and means for increasing the frictional en-
 10 gagement of the plate against said gear.

4. In combination, a bracket, a worm-wheel having a suitable bearing in said bracket, a worm also suitably journaled in said bracket and having two threads in mesh
 15 with said worm-wheel whereby with each revolution of said worm, said worm-wheel will be moved the distance of two teeth, a friction bearing plate bearing against one end of said worm, and means for increasing
 20 the frictional engagement of the plate against the worm.

5. In combination, a yoke constituting a bracket, said yoke being formed with over and underlying portions and a bearing plate
 25 integral therewith and extending at right angles thereto, a worm-wheel suitably journaled between the over and underlying portions of said yoke, a bearing plate adapted to have a detachable connection with said
 30 bracket, and spaced apart from the bearing plate integral with the bracket, a yoke attached to said detachable plate, a worm adapted to have a bearing between the integral and detachable bearing plates of the
 35 yoke, and in mesh with said worm-wheel, a frictional bearing plate suitably connected at one end to the bracket, its opposite end extending through the yoke of the detachable plate and engaging said worm, and
 40 means adjustable in the yoke for causing said frictional bearing plate to bear more or less against said worm.

6. In combination, a bracket, a shaft having one end journaled in said bracket, a gear
 45 carried by said shaft, a second gear operatively connected with said first mentioned gear, a plate supported by said bracket and having one end in engagement with said second gear for frictionally holding said
 50 second gear against rotation, and a threaded member adapted to engage said plate for in-

creasing the frictional engagement of the plate against the gear.

7. In combination, a bracket, a worm-wheel journaled in said bracket, a shaft con-
 55 nected with the worm-wheel, a worm also journaled in said bracket and in mesh with said worm-wheel, a plate supported on the bracket transversely to the axis of the worm with its free end in engagement with the
 60 worm, and a set screw for causing said plate to bear more or less against said worm.

8. In combination, a bracket, a worm-wheel journaled in said bracket, a shaft con-
 65 nected with the worm-wheel, a worm also journaled in said bracket and in mesh with said worm-wheel, a plate supported on the bracket transversely to the axis of the worm and its free end in engagement with the
 70 worm, an arm connected with said bracket and a set screw operatively connected with said arm to one side of the axis of said worm, and arranged to engage the plate for causing said plate to bear more or
 75 less against said worm.

9. In combination, a bracket having superimposed bearing plates and a transverse bearing plate integral therewith, a shaft
 80 journaled in said superimposed plates, a worm-wheel carried on said shaft between said superimposed plates, a transverse bearing plate detachable from said bracket, a bolt for securing said last-mentioned plate to the
 85 bracket, a yoke formed on the detachable plate, a worm journaled in said transverse bearing plate and in mesh with said worm-wheel, a friction bearing plate secured to the bracket by means of the bolt aforesaid, its
 90 free end passing through the yoke on the detachable plate and engaging with the worm and a set screw having a threaded engagement with the wall of the yoke, and adapted to engage with the friction bearing plate for causing said plate to bear more or
 95 less against the worm.

In testimony whereof I affix my signature, in presence of two witnesses.

CHARLES P. SESTER.

Witnesses:

CHAS. W. LA PORTE,
 ROBT. N. MCCORMICK.