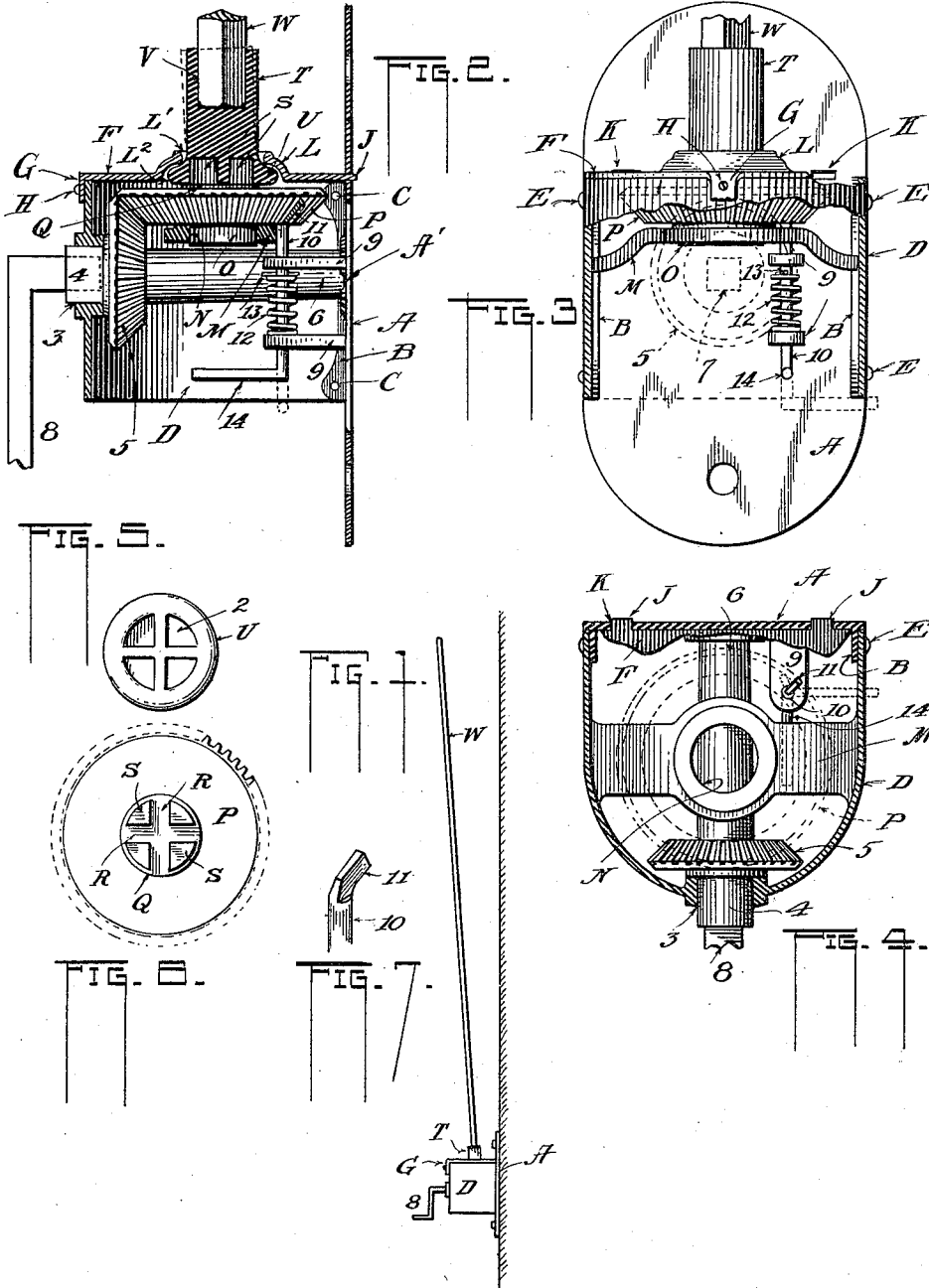


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GEARING FOR AWNINGS.
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GEARING FOR AWNINGS.

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To all whom it may concern:

Be it known that I, HERMAN OLTMANNS, 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 Gearing for Awnings; 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 pertains to improvements in gearing for awnings.

It pertains more particularly to mechanism for operating store awnings or such as include a roller upon which an awning cloth is wound.

One of the objects of the invention is to provide a simple mechanism for rotating the roller of the awning at a faster speed than with the common type of worm and worm-wheel mechanism, and to provide a peculiar arrangement for locking the gears of the same.

Another object is to construct a simple form of inclosure, or housing, for the operating parts, or gearing, of an awning nearly all of the parts of which can be cast and assembled with but little work.

Other objects and advantages will appear herein aided by the accompanying drawing, in which:

Figure 1 is a side elevation of the complete mechanism as mounted upon a building wall or other support. Fig. 2 is a side elevation, in part section, of a housing showing the awning operating parts carried by it. Fig. 3 is a front elevation of the same in part section with certain portions removed. Fig. 4 shows the top of the same in section. Fig. 5 shows the underside of one of the driving parts. Fig. 6 is a plan of a gear with which the portion shown in Fig. 5 engages. Fig. 7 shows a part of a latch for engaging one of the gears.

A represents a plate which forms the back of a housing or inclosure for the driving mechanism. Said plate is adapted to be secured to a building wall or other support, as shown in Fig. 1, and is preferably a casting. Near each of its edges is a forwardly extending vertical flange B, Figs. 1 and 4, provided with bolt-holes C Fig. 2.

D is a housing portion preferably cast in a semi-cylindrical form though, of course,

its exact shape is not important. Its rear vertical edges overlie the outer surfaces of the flanges B of the plate A and are secured thereto by means of bolts or screws E, for example, extending through it and through the said holes C of the latter and its outer surface preferably lies flush with the vertical edges of the plate B as shown in Fig. 4. A top plate or cover F is provided, see Figs. 2, 3 and 4, which, at its front edge, is provided with a depending lug G overlying the front outer surface of the said portion D, being secured thereto by a bolt or screw H. Its rear edge is provided with one or more lugs J, Fig. 4, which extend through apertures K in the plate A by means of which said plate F is firmly held in position. Cast with the portion D is a substantially central flange L which projects above its top surface and is provided with an opening L'. As clearly shown in Fig. 2 it creates a recess L² to receive the flange of a member to be described presently. Cast also with the portion D is a substantially horizontally disposed bridge M, extending from side to side, provided with a central aperture N adapted to receive an extension O of a beveled gear P. At the opposite side or top of this gear is a hub extension Q provided with two channels R extending at right angles to one another to form the extensions S which preferably lie within the undercut or recess L² opposite and below the opening L' in the top of the plate F as shown in Fig. 2.

T is a member, previously referred to, having a flange U at its lower end which lies within the undercut L² of the flange L. This member extends upward from the plate F and is provided preferably with a socket V in its upper end to receive a shaft W the end of which is adapted to fit said socket. The under-surface of this member T is provided with a series of sockets or recesses 2 corresponding in position with and adapted to receive the extensions S described, of the wheel P, said sockets being much larger than the extensions S in order to permit the member to freely rock or swivel upon the latter, one of the positions of the member being indicated in broken lines in Fig. 2. It is observed that the flange L partially overlies the flange U and prevents the member T from lifting from the extension S while allowing it to rock thereon; and it also serves to hold the gear P upon the bridge M and

does not permit it to rise as would be its tendency when in operation.

The front of the portion D is provided with a bore 3 to receive the hub 4 of a pinion 5 lying inside it. Said pinion meshes with the gear P and has a shaft extension 6 at its rear side which preferably extends to the back plate A and lies in a socket A', the plate A being preferably thickened at this point, as shown, to provide sufficient metal to form the socket, the thickened part providing a bearing for the said extension 6. Both of the extensions of the pinion are thus carried in bearings and said pinion is held firmly in its working position between the plate A and the front of the part D. The extension or hub 4 of the pinion is provided with a socket 7 adapted to receive the end of any usual crank 8 as the driving member.

Cast with the inner face of the back plate A is a pair of lugs 9. A latch 10 extends vertically through these and has an angled extension 11 at its upper end to lie between two of the teeth of the wheel P. The normal position of said latch, when the gears are at rest, is as shown in full lines in Fig. 2, there being a spring 12 interposed between the lower of the two lugs 9, for example, and a pin 13 extending through said latch, the tendency of which is to constantly hold the latch-extension in engagement with the gear. The lower end of said latch has a right angled extension or arm 14, which, when the latch is drawn downward to disengage it from the gear, is swung beneath the lower edge of the housing portion D as clearly illustrated in broken lines in Fig. 3. The lugs 9 may be attached to or cast with some other portion of the mechanism, as for instance the housing D, but preferably they are a part of the said back plate A.

There is very often a considerable distance of measurement between the awning roller and the face of the building and it is desirable to keep the operating mechanism, that is to say, the housing D and its parts as close to the building as possible so that it will not extend too far over a sidewalk for example, in which event it becomes necessary to incline the shaft W outwardly at its upper end as shown in Fig. 6. In order to provide for this I construct the member T and the upper hub portion of the wheel P as described so that while motion is transmitted from the latter to the former these members can swivel on one another, the flange U of said member T being preferably rounded on its outer and upper surface to conform to the recess L². The member T can thus lie in line with the angled shaft W and work in that position.

When it is desired to operate the mechanism the latch 10 which can be reached from below, the housing D being open beneath, is drawn down against the tension of the spring

to withdraw it from the gear P, and then turned substantially at right angles to place its arm 14 being beneath the lower edge of the housing as previously described. After the proper adjustment of the awning is made by turning the crank, the latch is released and permitted to engage the gear.

All of the parts of my mechanism are cast and little or no machine work is necessary in putting the parts together.

I do not wish to be confined to the exact arrangement shown and described herein since equivalents of the parts and structures may be provided without departing from the spirit of the invention.

As an example of one of the changes that may be made, it may be stated that the lower end of the shaft W may directly engage the hub of the wheel P without using the member T. That is to say the said wheel and shaft may have direct driving relation, using any means by which a positive drive will result while maintaining the desired swivel connection.

Having thus described my invention, I claim:—

1. In a device of the class described, a gear box comprising a part for attachment to a wall and a gear supporting portion, a gear carried by said portion, a member engaging the gear and having swiveled relation therewith and a detachable cover-plate overlying the said supporting portion and having an opening therein to receive the swiveling member and adapted to hold the same and the gear in connected relation.

2. In a device of the class described, a gear box comprising a part for attachment to a wall and a gear inclosing portion including a bridging constituting a bearing for a gear wheel, a gear wheel mounted on the bridging, a member engaging the gear wheel and adapted to swivel thereon, and a detachable cover-plate overlying the said gear and adapted to hold the said member in engagement with the gear.

3. In a device of the class described a wheel for driving an awning roller including a socket portion, a member positively engaging the socket portion and adapted to have a swiveling movement relatively to the gear and provided with an extending portion on its outer surface, and a member overlying the said portion and adapted to hold the first said member in engagement with the said socket portion of the gear.

4. The combination of a plate, a U-shaped shell-portion detachably secured to said plate and including a bridging member connecting the opposite walls of said portion provided with a socket in its upper side, a gear seated in said socket, and a cover-plate lying upon the shell and including an opening above and vertically in line with the socket.

5. The combination of a plate, a U-shaped

shell-portion detachably secured at its edges to the same and including a bridging member extending between and connecting the opposite walls of said portion and provided with a socket, a gear seated in said socket, a cover-plate lying upon the shell and including an opening opposite the socket, and a member extending through said opening and loosely engaging the hub of the gear and held in such engagement by the cover-plate.

6. The combination of a plate, a U-shaped shell-portion detachably secured thereto and including a bridging member extending between and connecting the opposite walls of said portion and having a socket, a cover-plate lying upon the said portion and engaging both the latter and the plate and having an opening opposite the socket, and a gear wheel having an extended hub portion at each side, one of them to extend into the socket, the other lying opposite the opening of the cover-plate.

7. The combination of a plate, a shell portion secured thereto in a detachable manner and including a substantially horizontal bridging portion provided with a socket, a cover-plate lying upon the shell-portion and including an opening opposite the socket, a gear having a hub extension seated in the socket, and a second gear in mesh with the first and including an extension at each side, there being a socket in the plate and an opening in the shell to receive the extensions.

8. The combination of a support, a gear wheel rotatably seated thereon, and having a hub-extension, a member stationed above the gear and having an opening therein opposite the said hub-extension and having a recess in its under surface surrounding the opening, and a member positively but loosely engaging the hub-extension and extending through the opening and provided with an extension lying in the recess and free to rock therein.

9. The combination of a support, a gear wheel rotatably seated thereon, and having a hub-extension, a member stationed above the gear and separable from the support and having an opening therein opposite the said hub-extension and having a recess in its under surface surrounding the opening, and a member positively but loosely engaging the hub-extension and extending through the opening and provided with an extension lying in the recess and free to rock therein.

10. The combination of a support, a gear-wheel mounted thereon and rotatable relatively thereto and provided with a hub-extension, a member lying at one side of the gear-wheel and provided with an opening opposite the said hub-extension and further provided with a recess in its side adjacent the extension and surrounding the opening, and a member positively engaging the hub-

extension and free to rock thereon and having an extension seated in said recess, the inner wall surface of the latter and the extension being spherically curved to permit one to rock within the other.

11. The combination of a support, a gear-wheel mounted thereon and rotatable relatively thereto and having a hub-extension, a member positively engaging said hub-extension and adapted to receive rotary movement therefrom, said member adapted to rock freely upon said extension, and a member lying opposite the side of the gear having the extension and having a hole therein and a socket, the first described member having an annular spherically curved extension to lie in said recess.

12. The combination of a plate, a support secured in a detachable manner thereto, a gear-wheel rotatably mounted upon the support, a member stationed at one side of the gear-wheel and secured in position in a detachable manner, and having an opening therein and also having a socket surrounding said opening in the side of the member adjacent the gear-wheel, and a member extending through the hole and positively engaging said gear-wheel and having an extension lying in said socket, said member being held in engagement with the wheel by the first described member.

13. The combination of a support, a gear-wheel rotatably mounted thereon, a member positively engaging said gear and adapted to have a free rocking movement relatively to said gear-wheel, and means engaging the member to secure it and the gear in positive driving relation.

14. The combination of a support, a gear-wheel rotatably mounted thereon, a member positively engaging said gear and adapted to have a free rocking movement relatively to said gear-wheel, and means in which the member is seated, the same being adapted to secure said member and the gear in positive driving relation.

15. The combination with a gear-wheel of means adapted to engage and hold the same in a stationary position comprising a member adapted to lie between two of the teeth of said gear-wheel, means constantly tending to hold the first said means between the said teeth, and other means to hold the said first means out of engagement.

16. The combination of a support, an inclosure including a bridging-portion, a gear rotatable on said bridging-portion, a second gear in mesh with the first, a member lying opposite one side of the said second gear, a member having positive engagement with the gear and held in such engagement by the first described member and a latch adapted to engage one of the gears, and means constantly tending to maintain such engagement.

17. A gearing box comprising a support,
a shell-portion secured thereto and detach-
able therefrom, a cover-plate overlying said
shell-portion, there being an opening in the
5 support, an extension on the cover-plate to
enter the same, and means to secure the lat-
ter member to the shell-portion.

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

HERMAN OLTMANNS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."