No. 748,641. PATENTED JAN. 5, 1904.

C. H. NEWELL.

AWNING ROLLER.

APPLICATION FILED DEC. 16, 1902.

NO MODEL.

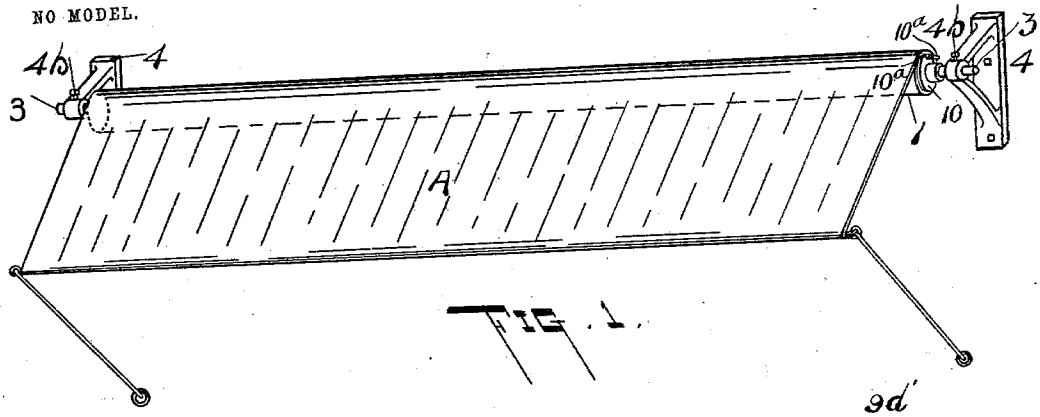


FIG. 1.

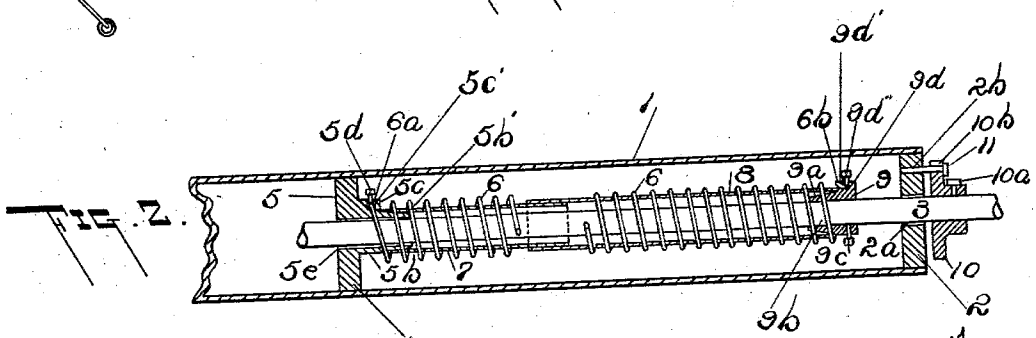


FIG. 2.

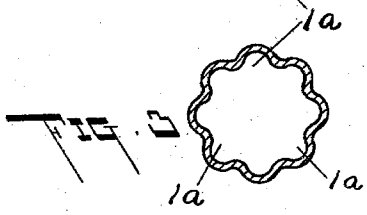


FIG. 3.

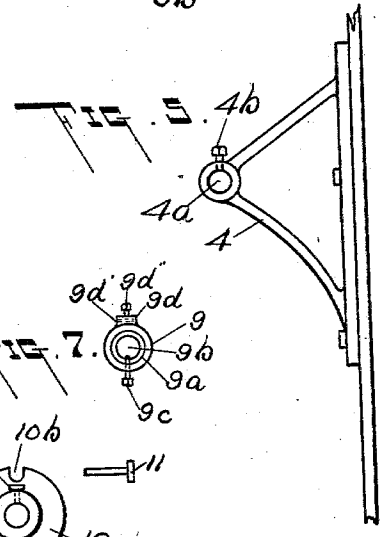


FIG. 5.

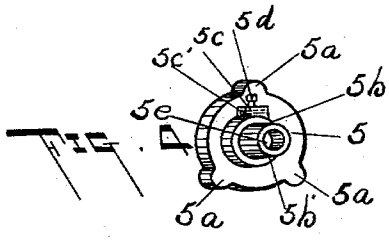


FIG. 4.

FIG. 7.

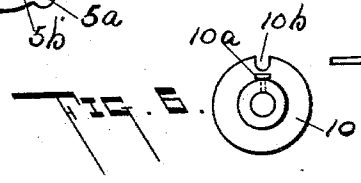


FIG. 6.

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No. 748,641. Patented January 5, 1904.

UNITED STATES PATENT OFFICE.

CHARLES H. NEWELL, OF SAGINAW, MICHIGAN.

AWNING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 748,641, dated January 5, 1904.

Application filed December 16, 1902. Serial No. 135,425. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. NEWELL, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Awning-Rollers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This is a roller for awnings for store-fronts, &c.

The objects of my invention are to provide a roller for large and heavy awnings, to provide a supporting-bearing upon which the roller can turn freely, to provide means for securing the counterbalancing-spring against rotation in the roller, while permitting its longitudinal movement to accommodate the longitudinal expansion and contraction of the spring, to provide means for preventing the spring from buckling, and to provide means for adjusting the torsion of the counterbalancing-spring without removing the roller from its support.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of an awning using this roller. Fig. 2 is a longitudinal section of one end of the roller, showing the spring broken away in part. Fig. 3 is a cross-section of the roller. Fig. 4 is a detail of the sliding block for securing the counterbalancing-spring to the roller. Fig. 5 is a bracket for supporting the roller. Fig. 6 is the collar and pin for locking the shaft and roller together. Fig. 7 is a detail of the block for fixing the counterbalancing-spring to the shaft.

Similar characters refer to similar parts throughout the several views.

The roller 1 is made of sheet metal of corrugated cylindrical section, a form that imparts the stiffness necessary for awning-rollers of great length. Each end of the roller 1 is fitted with an internal cap 2, having a central hole 2^a, through which passes the roller-shaft 3. This shaft 3 turns in the hole 2^a and rests in the bearing 4^a of the supporting-bracket 4. The bracket 4 has a set-bolt 4^b, by which the shaft 3 may be clamped to prevent its turning or moving lengthwise. The opposite end of the shaft is supported within the roller by the block 5 and may turn freely in its bearing 5^e. This block 5 is not a fixed block, but is free to slide lengthwise in the roller 1 along the shaft 3. It has on its circumference a number of projections 5^a, which fit corresponding corrugations 1^a of the roller. It must therefore turn when the roller turns. In practice I prefer to use a block having three such projections. This block has on one side a boss 5^b, carrying a lug 5^c, having a hole $5^{c'}$, through which the end 6^a of the counterbalancing-spring 6 is passed and secured by a set-screw 5^d. The boss 5^b terminates in a slightly-conical projection $5^{b'}$, concentric with the shaft, upon which a tube 7 is secured. This tube telescopes with another tube 8, the opposite end of which is secured to a block 9, having a similar conical projection 9^a. This block 9, to which the tube 8 is secured, has a concentric hole 9^b, through which the shaft passes, and is secured to the shaft by a set-screw 9^c. It has also a lug 9^d, having a perforation $9^{d'}$ to receive the end 6^b of the spring 6, and is provided with a set-screw $9^{d''}$ to clamp the end of the spring. The counterbalancing-spring 6 is thus secured at its end 6^b to the shaft 3, which remains stationary, and at the end 6^a to the roller 1, which revolves, and is tightened or relaxed as the awning A is lowered or raised. As the spring 6 is wound or unwound it varies in length, and the sliding block 5 moves lengthwise the roller to accommodate this variation in length, the telescoping tubes 7 and 8 acting meanwhile to prevent the spring from buckling.

To adjust the counterbalancing-spring, I provide a collar 10 on the shaft 3. This collar has a set-screw 10^a, by which it is fixed to the shaft 3. It has also a radial slot 10^b, through which a pin 11 may be passed into holes 2^b, provided in the end cap 2. To tighten the spring 6, the awning A is pulled down until the spring has the desired tension. The pin 11 is then passed through the slot 10^b in the collar 10 into one of the holes 2^b in the cap 2, locking the shaft 3, so that it must turn when the roller turns. The set-screw in the bracket is next loosened and the awning is rolled up by hand, its weight and that of the awning being supported by the brackets 4, in the bearings of which the

shaft revolves easily. The set-screw in the bracket is then tightened to clamp the shaft 3, and the pin 11 is moved so, that the roller 1 is again free to turn on the shaft 3. Thus when adjustment of the spring tension is necessary the shaft is securely held in the bracket by means of the set-screw until the roller is made fast to the shaft by means of the pin 11 and collar 10. In adjusting tension with this device it is not necessary to hold both the shaft and the roller against rotation while locking the roller to the shaft.

The collar serves not only to adjust the tension of the spring 6, but it also limits the lateral motion of the roller, preventing end play of the shaft when rolling up the awning by hand.

By the means above described I have provided a roller admirably suited to be used with heavy awnings, I have insured against buckling of the spring, and have made it unnecessary to lift the awning from its supports to adjust the spring.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. A roller for awnings comprising in combination a sheet-metal roller of a corrugated cylindrical section; a supporting-shaft on which the roller turns; a block movable lengthwise the roller, turning with it, and supporting the end of the shaft within the roller; a block fixed to the shaft within the roller; a helical spring surrounding the shaft secured by one end to the block carried by the roller, and by the other end to the fixed block; a pair of telescoping tubes within the spring, one carried by the movable block and one carried by the fixed block; a supporting-bracket in which the shaft turns; means for fixing the shaft to the roller; for the purposes set forth.

2. A roller for awnings comprising in combination a sheet-metal roller of a corrugated cylindrical section; a supporting-shaft on which the roller turns; a block movable lengthwise the roller, turning with it, and supporting the end of the shaft within the roller; a block fixed to the shaft within the roller; a helical spring surrounding the shaft secured by one end to the block carried by the roller, and by the other end to the fixed block; a pair of telescoping tubes within the spring, one carried by the movable block and one carried by the fixed block; a supporting-bracket in which the shaft turns; means for fixing the shaft in the bracket; and means for fixing the shaft to the roller; all substantially as described and for the purposes set forth.

3. In combination with a roller for awnings turning on a shaft and having a helical spring secured by one end to the shaft and by the other end to the roller, a bracket having a bearing in which the shaft may turn; a set-screw on said bracket for fixing the shaft against rotation; a collar rigidly secured to the shaft and fixed against rotation and endwise movement, between the bracket and the end of the roller; and means for temporarily locking the collar to the roller so as to rotate the shaft when the roller turns.

4. In combination with a roller for awnings turning on a shaft and having a helical spring secured by one end to the shaft and by the other end to the roller, a bracket having a bearing in which the shaft may turn; a set-screw on said bracket for fixing the shaft against rotation; a collar having a slot, said collar being rigidly secured to the shaft and fixed against rotation and endwise movement between the bracket and the end of the roller and a pin adapted to be removably inserted in the slot of the collar and to engage the end of the roller to lock the collar to the roller so as to rotate the shaft when the roller turns.

5. In combination with a roller for awnings turning on a shaft and having a helical spring secured by one end to the shaft and by the other end to the roller; a pair of blocks on the shaft, one secured to each end of said spring, one block secured to the shaft and the other carried by the roller; a pair of telescoping tubes within said spring, one of the tubes secured to the block fixed to the shaft and the other of the tubes fixed to the block carried by the roller for the purposes set forth.

6. In combination with a corrugated cylindrical sheet-metal roller for awnings, turning on a shaft and having a helical spring secured by one end to the shaft and by the other end to the roller; a block supporting the end of the shaft within the roller and rotated by the roller and free to move lengthwise therein, said block having projections adapted to engage corrugations of the roller and means for securing the spring to the block for the purposes set forth.

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

CHARLES H. NEWELL.

Witnesses:
E. A. PERKINS,
JAS. T. HALE.