

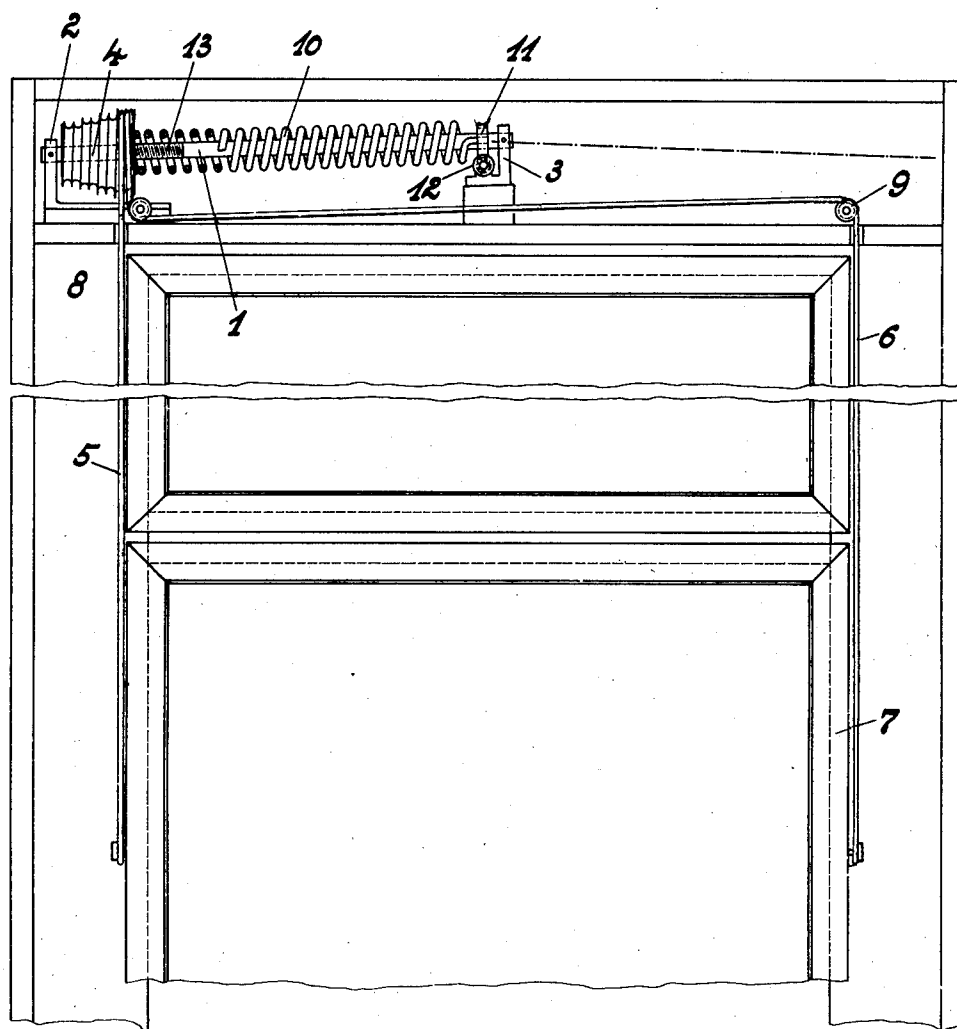
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COMPENSATING DEVICE FOR SASH WINDOWS AND THE LIKE

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COMPENSATING DEVICE FOR SASH
WINDOWS AND THE LIKE

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5 Claims. (Cl. 16—198)

My invention relates to sash windows having devices for compensating the weight of the sash, the cords of which, when the sash is raised, will be wound upon one or more spring controlled rollers or drums.

According to this invention the object of which is to ensure the sash cords being wound properly, the rollers or drums are mounted rotatably upon a stationary shaft in such a manner, that during each revolution the rollers will travel sideways a distance equal to the thickness of the cord. Agreeably to this purpose the end of the shaft upon which the roller rides and the bore of the roller are provided with threads engaging one with the other. The rollers rotating when the sash is raised will consequently at every rotation also move a certain distance sideways along the shaft.

The drawing shows, by way of example, a preferred form of the sash window embodying the invention.

In the drawing, 1 indicates the stationary shaft of the compensating device which is supported in blocks 2 and 3 attached to the window frame, 4 indicates a drum like roller the surface of which is provided with a pair of identical grooves for the accommodation of the sash cords 5 and 6 from which the sash is suspended. The drum 4 is of conical shape and the grooves form a double thread thereon. The two grooves being identical both sash cords 5 and 6 may be wound side by side on one and the same drum. For the purpose of guiding the cord 6 two guide rollers 8 and 9 are provided which are fastened to the block 2 and the window frame respectively. 10 indicates a cylindrical helical tension spring, one end of which is connected to the drum 4, while the other end is fastened to the worm wheel 11 of a self checking worm gear. By a turn of the worm 12 which is journaled in bearings on the block 3, the tension on the spring 10 may be adjusted to the exact degree necessary for compensating the weight of the sash. 13 indicates a thread on the shaft 1 which engages with a corresponding thread in the bore of the drum 4.

The device functions as follows:

When the sash 7 is raised the load on the spring 10 is reduced, and the spring 10 expanding to a corresponding degree will rotate the drum 4 which will thus be caused to travel laterally along the threaded portion of the shaft 1, while the raising of the sash is continued. The rate of progress of this lateral movement is such that the proper relative position of the taking-up portions of the grooves on the drum to the successive portions of the cords 5 and 6 is maintained continually

and their orderly dropping into the grooves is ensured. If the shaft were disposed horizontally the wound portions of the cord would, because of the angle of inclination of the grooves, press against their flanks. In order to prevent excessive friction from this cause the shaft is therefore according to the invention, inclined to the horizontal to such an extent with regard to the pitch of the grooves that the cords will chafe against the flanks of the grooves, but will drop into the bottoms thereof.

It is of course, within the scope of the invention to provide separate compensating devices for each of the cords 5 and 6; the grooves on the drum would in that case be single-threaded. But a great deal of material, and also of space, is saved by the embodiment just now described since, as shown in the drawing, on the right hand side of the window a second compensating device for a second window sash could conveniently be placed.

What I claim is:

1. A compensating device for sash windows and the like, comprising a stationary shaft having a threaded portion, a grooved drum rotatably mounted on said shaft and having a threaded bore engaging the threads on said shaft so as to move uniformly lengthwise thereon while being rotated, and tensioning means for rotating said drum.

2. A compensating device for sash windows, and the like, comprising a stationary shaft having a threaded portion, a grooved drum rotatably mounted on said shaft and having a threaded bore engaging the threads on said shaft so as to move uniformly lengthwise thereon while being rotated, tensioning means for rotating said drum, and means for adjusting said tensioning means.

3. A compensating device for sash windows, and the like, comprising a stationary shaft inclined to the horizontal and having a threaded portion, a conical grooved drum rotatably mounted on said shaft and having a threaded bore engaging the threads on said shaft so as to move uniformly lengthwise thereon while being rotated, tensioning means for rotating said drum, and means for controlling said tensioning means.

4. A compensating device for sash windows, and the like, comprising a stationary shaft inclined to the horizontal and having a threaded portion, a grooved conical drum rotatably mounted on said shaft and having a threaded bore in engagement with the threads on said shaft so as to move uniformly lengthwise thereon while being rotated, and a tension spring encircling said shaft

and having one end attached to said drum for rotating the same.

5. A compensating device for sash windows, and the like, comprising a stationary shaft inclined to the horizontal and having a threaded portion, a grooved conical drum rotatably mounted on said shaft and having a threaded bore in engagement with the threads on said shaft so as to move uni-

formly lengthwise thereon while being rotated, and a tension spring encircling said shaft and having one end attached to said drum for rotating the same, a worm-wheel on said shaft having secured thereto the other end of said tension spring, and a worm for rotating said worm-wheel to thereby control the tension of said spring.

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