Nov. 2, 1937. F. A. SCHUETZ 2,098,016

CURTAIN CONSTRUCTION

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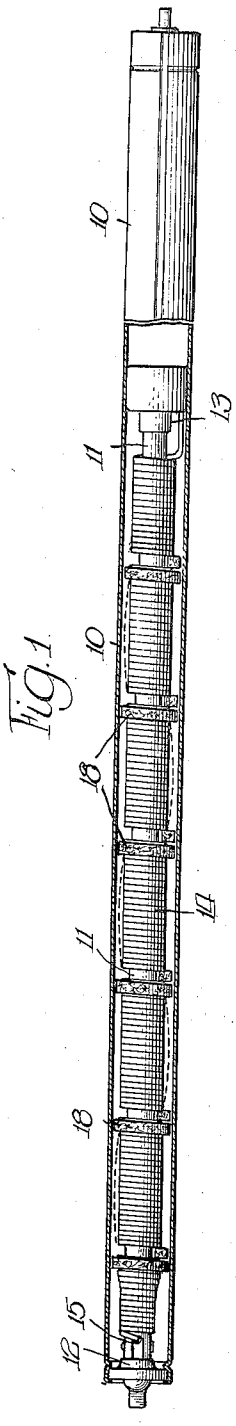

Fig. 1

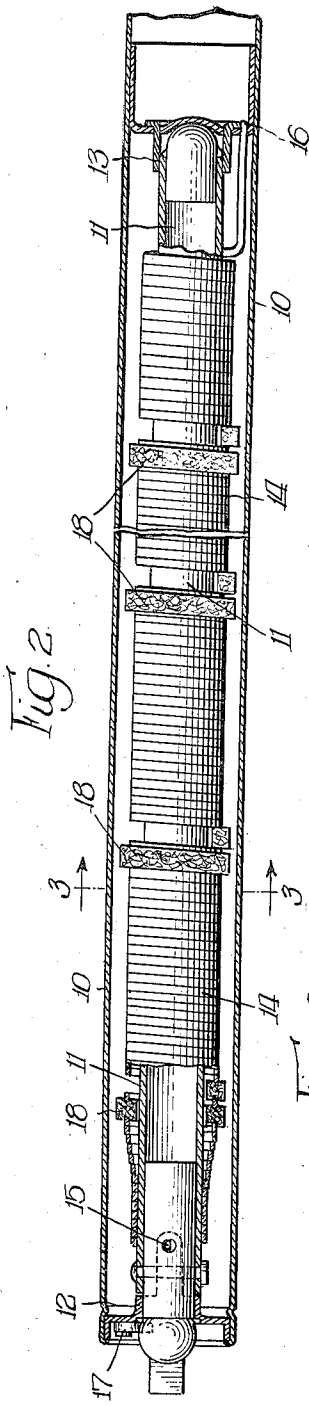

Fig. 2

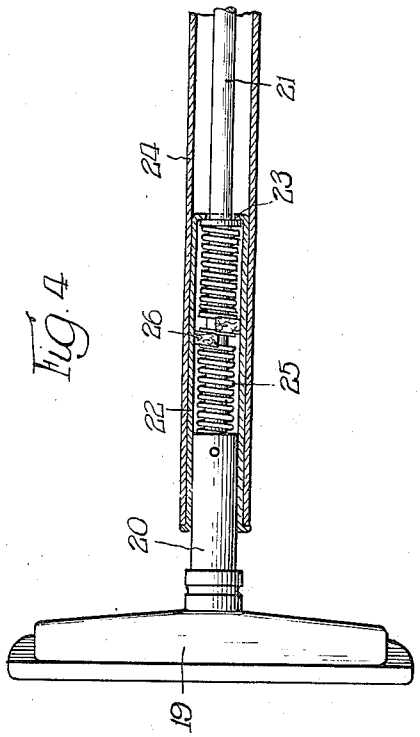

Fig. 4

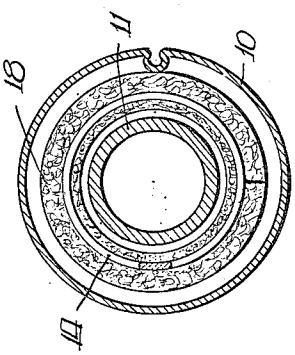

Fig. 3

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CURTAIN CONSTRUCTION

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4 Claims. (Cl. 156—10)

In the spring wound curtains which are used in railway cars and other conveyances, the long torsion springs in the rollers at the tops of the curtains are frequently the source of faint but persistent buzzing sounds which are very annoying to the passengers. This is also true of the small compression springs in the fixtures at the bottoms of the curtains. These noises are caused by the springs vibrating intermediate their ends against adjacent parts of the rollers and fixtures, due to the lateral bowing which takes place in the springs when they are wound up or compressed and the lateral sagging which takes place when the forces on the springs are relieved.

The object of the present invention is to provide simple but highly effective means for silencing the springs in curtain rollers, curtain fixtures and other spring-actuated devices where similar conditions exist.

Two different applications of the invention are herein illustrated and described—one in connection with the torsion spring in a curtain roller and the other in connection with the compression spring for one of the heads of a curtain fixture—but it will of course be appreciated that the invention is capable of various other applications coming within the scope of the appended claims.

In the accompanying drawing:

Fig. 1 is a partially sectioned side view of a spring wound curtain roller, showing the new sound-deadening means applied to the torsion spring in the roller;

Fig. 2 is a more detailed sectional view of the roller;

Fig. 3 is a transverse section, taken on the line 3—3 of Fig. 2; and

Fig. 4 is a partially sectioned side view of one of the spring-projected heads of a curtain fixture, showing the new sound-deadening means applied to the compression spring in the fixture.

The curtain roller shown in Figs. 1, 2 and 3 includes a hollow cylindrical barrel 10, a spindle 11 which is journaled at 12 and 13 in the barrel, a long coil spring 14 which is sleeved over the spindle on the inside of the barrel and is attached at one end 15 to the spindle and at the other end 16 to the barrel, and a locking pawl 17 on the barrel for coaction with the spindle. The spindle is a composite structure, and the portions of the barrel in which the spindle is journaled are separate members which are attached to the barrel, but these details have no bearing on the invention.

The spring 14 is spaced for the greater part of its length both from the barrel and from the spindle by small felt strips 18 which are wound at intervals into the spring between forced apart coils of the latter, in the form of small split washers or helical rings. These inserts 18 project both outwardly and inwardly from the spring throughout substantially the entire circumference of the latter. The natural tendency of the coils to close up at the locations of the felt strips acts to prevent any displacement of the latter.

When the ordinary curtain roller spring is wound up the coils of the spring will bunch or gather up in places and move sidewise until stopped by engagement with either the barrel or the spindle. When the roller is jarred the spring will vibrate in engagement with these other parts, producing objectionable noises. By using the felt inserts 18—which cost practically nothing to make, and can be very easily inserted, and do not interfere in any way with the action of the spring—this difficulty is effectively remedied. The inserts 18 are preferably spaced from each other longitudinally of the spring at about the intervals shown in the drawing. They keep the coils of the spring from bunching up to any great extent and the sidewise movement of the coils which takes place when the spring is wound up is not localized at some one point but is instead more or less evenly distributed between the spring sections divided by the inserts, with the result that the bowing or bulging of the spring in each of these sections takes place on such a small scale as to permit the inserts to keep the coils of the spring away from both the spindle and the barrel.

In Fig. 4 the same idea is shown applied to one of the outwardly spring-pressed heads 19 of a curtain fixture. As will be observed in this view, the head is provided with a stem 20 which is attached to a rod 21. The stem 20 is slidably mounted within a tube 22, which tube extends inwardly a considerable distance beyond the end of the stem and is provided at its inner end with a flange 23 which is centrally apertured to accommodate the rod 21. This tube 22 is mounted in one end of a much larger and longer tube 24 which is adapted to be positioned in a hem in the bottom of the curtain. A coil spring 25 is located inside the tube 22 about the rod 21, with its ends compressed between the inner end of the stem 20 and the opposing flange 23 on the tube. The spring 25 acts to project the head 19 outwardly into spring-pressed engagement with a guide, and when the head is in engagement with the guide the spring will of course be compressed. In order to prevent the spring 25 from bowing sidewise intermediate its ends into engagement with the tube 22 a small felt strip 26

is inserted between two of the coils of the spring, where it acts as a cushioning spacer between the inside of the spring and the rod and the outside of the spring and the tube.

I claim:

1. The combination with a rod, and a tube surrounding the rod in spaced relation thereto, of a coil spring on the rod within the tube, and one or more cushioning members positioned between adjoining coils of the spring in radially projecting relation thereto.

2. The combination with a rod, and a tube surrounding the rod in spaced relation thereto, of a coil spring on the rod within the tube, and a number of felt inserts in the form of split helical rings positioned at intervals between adjoining coils of the spring in both inwardly and outwardly projecting relation to the coils for preventing the spring from bearing against either the rod or the tube.

3. The combination with a rod, and a tube surrounding the rod in spaced relation thereto, of a coil spring on the rod within the tube, and means carried by the spring for preventing the latter from vibrating against either the rod or the tube.

4. The combination with a rod, and a tube surrounding the rod in spaced relation thereto, of a coil spring on the rod within the tube, and means carried by the spring for preventing the latter from vibrating against either the rod or the tube, said means being located at intervals only throughout the length of the spring whereby to allow unconfined movement of the coils of the spring intermediate the spaced locations of said means.

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