F. J. BORER.

BELL CORD HANGER.

APPLICATION FILED MAY 10, 1917.

1,281,128.

Patented Oct. 8, 1918.

2 SHEETS—SHEET 1.

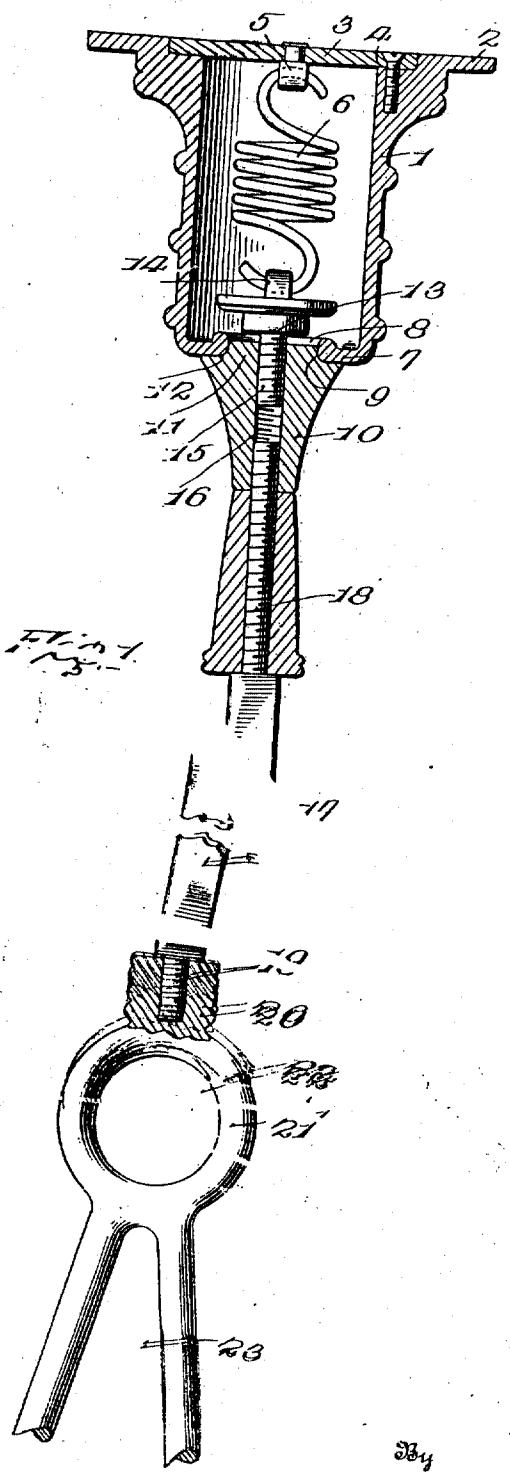


FIG. 1.

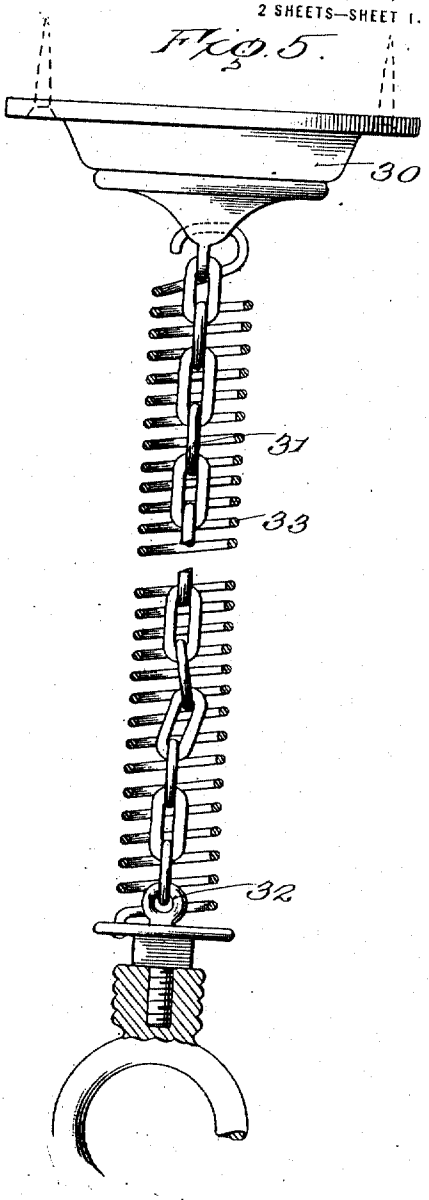


FIG. 5.

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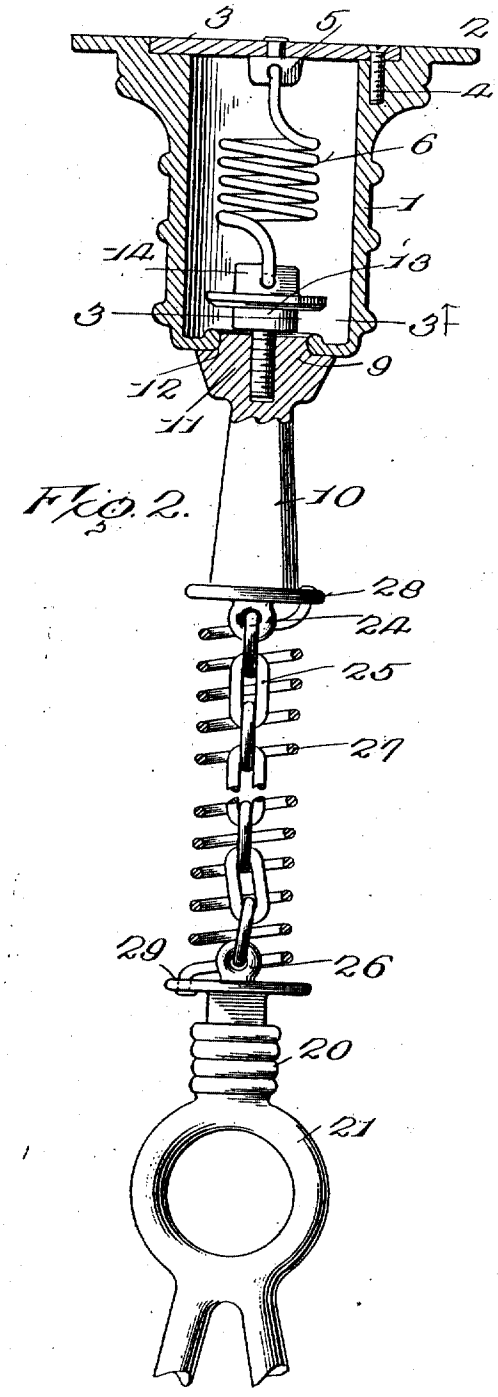


FIG. 2.

FIG. 3.

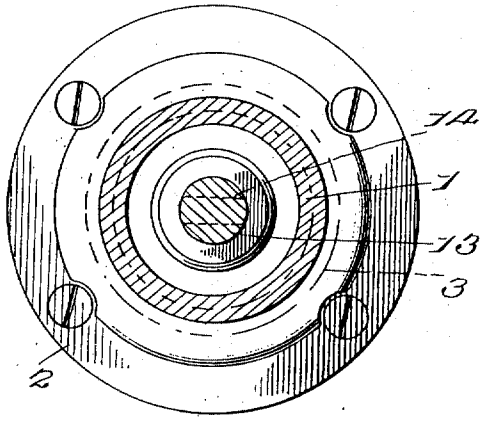
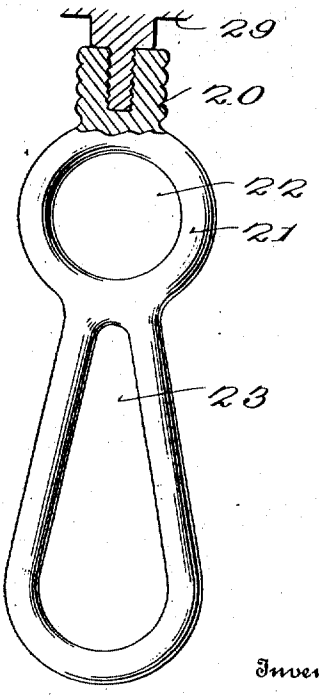


FIG. 4.



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BELL-CORD HANGER.

1,281,128. Specification of Letters Patent. Patented Oct. 8, 1918.

Application filed May 10, 1917. Serial No. 167,340.

To all whom it may concern:

Be it known that I, FRANK J. BORER, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Bell-Cord Hangers, of which the following is a specification.

This invention relates to hangers for bell cords, and conductors' valve cords employed in railway cars, and has as its object to provide a hanger of this class which will possess none of the disadvantages attending the use of a hanger which is pivoted at its upper end for free swinging movement or which is flexible at its said upper end, only. Such hangers swing too freely and rattle due to the motion of the car. It is impractical to employ a rigid hanger, especially in baggage and scenery cars as there would be likelihood of such a hanger being broken if struck by baggage or scenery and, of course, in the event of breakage of the rigid hanger it is likely that the cords supported thereby would be pulled so as to cause delay through the signals accidentally given. However, pivoted and rigid hangers both present certain advantages and it is, therefore, the aim of the present invention to provide a hanger possessing all of the advantages of both a pivoted and rigid hanger without, however, possessing any of their disadvantages. More specifically speaking, it is the object of the invention to provide a hanger which will normally assume a perpendicular position and will not sway freely from side to side as does the ordinary pivoted hanger, but which at the same time will be yieldable to such an extent that it may yield to either side when either of the cords supported thereby is pulled. Of course, a further advantage possessed by such a hanger is that when employed in baggage and scenery cars it will yield when struck by baggage or scenery without breaking.

In the accompanying drawings:

Figure 1 is a vertical longitudinal sectional view through a hanger constructed in accordance with the present invention, the hanger being designed primarily for employment in passenger coaches;

Fig. 2 is a similar view illustrating a modified form of the invention designed primarily for employment in baggage and scenery cars;

Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a vertical sectional view through the lower portion of the hanger shown in Fig. 2;

Fig. 5 is a view, partly in elevation and partly in section, illustrating a modified form of hanger also designed for use in baggage and scenery cars.

In that form of the invention shown in Fig. 1 of the drawings, the hanger includes a housing which is preferably of hollow cylindrical form and which may be ornamented as desired, the housing being indicated by the numeral 1 and being provided at its upper end with an annular attaching flange 2 through which suitable securing elements may be passed in securing the hanger to the ceiling of the car. The upper end of the housing 1 is closed by a plate 3 which is secured in place by means of screws or other suitable fastening elements 4. Centrally the plate 3 is provided upon its underside with an eye 5 to which is connected the upper end of a spring 6 which is relatively short and depends within the housing 1 and is, consequently, concealed by said housing. The housing in its lower end is provided with an inwardly projecting annular flange 7 defining an opening 8, the wall of which, or in other words, the inner edge of the flange, is rounded, as at 9.

The numeral 10 indicates a head which may be of any ornamental form and which has its upper end formed with a shallow boss 11 which normally fits within the opening 8, the boss being circular and the circumferential surface thereof being gradually merged with the upper surface of the head 10, as indicated by the numeral 12, so as to conform to the rounded wall 9 of the opening 8. The numeral 13 indicates a member which is provided with an eye 14 to which is connected the lower end of the spring 6, the member upon its upper side being provided with a threaded stem 15 which is fitted into the upper end of a threaded bore 16 formed axially in the head 10 and extending the entire length thereof.

In this form of the invention the suspension member of the hanger is in the nature of a rod 17 which may be polygonal or circular in cross section and which, at its upper end, is provided with a threaded stem 18 fitting in the lower end of the bore 16 in the

head 10. The lower end of the rod 17 is provided with a short threaded stem 19 which is fitted to a threaded socket formed in a short shank 20 at the upper end of the hanger proper, the said hanger proper comprising a member 21 having openings 22 and 23 to receive the two cords to be supported.

From the foregoing it will be understood that normally the hanger will occupy the position shown in Fig. 1 of the drawings. However, should the hanger be struck by baggage or scenery or any other object or should the bell cord be pulled laterally, the hanger will swing or yield in such direction, the boss 11 partly leaving the opening 8 and the spring 6 being placed under tension. However, when the hanger is freed it will be promptly swung to its normal position due to the action of the spring 6.

That form of the invention shown in Fig. 2 of the drawings is substantially the same as the form shown in Fig. 1 except that the rigid rod 17 is replaced by a semi-flexible connection between the head 10 and hanger 21. In this form of the invention the head 10 is provided at its lower end with an eye 24 to which is connected the upper end of a chain 25, the lower end of said chain being connected to an eye 26 located at the upper end of the shank of the hanger proper. Surrounding the said chain is a coil spring 27 connected at its upper end to the lower end of the head 10, as at 28, and at its lower end to the shank 20 of the hanger 21, as indicated by the numeral 29. The spring 27 is so tensioned that normally the chain 25 will be slightly slack, as shown in Fig. 2, and, furthermore, the spring 27 is sufficiently stiff to insure of the hanger as a whole normally maintaining a perpendicular position. This particular form of hanger is especially desirable for use in baggage and scenery cars due to the fact that it is yieldable to a greater degree than the hanger previously described, the rigid rod 27 being, as stated, replaced by the semi-flexible connection comprising the chain 25 and spring 27. It will be understood that the chain 25 limits longitudinal expansion of the spring 27 so that if the bell cord is sharply pulled downwardly the spring may yield so as to prevent breaking of the cord and yet this yielding movement is limited by the chain. On the other hand, the spring 27 is, as stated, relatively stiff so that the hanger as a whole normally stands perpendicular. However, if the bell cord is pulled laterally or if the hanger is struck by baggage or other objects the spring 27 may yield laterally so as to compensate for the force acting against the hanger.

That form of the invention shown in Fig. 5 of the drawings is extremely simple in construction and may be manufactured more cheaply than the previously described forms. It comprises a base 30 of any suitable design which is to be secured to the car ceiling and connected at its upper end to this base and depending therefrom is a chain 31 corresponding to the chain 25, the said chain 31 being connected at its lower end to an eye 32 corresponding to the eye 26. A spring 33 corresponding to the spring 27 is connected at its upper end to the base 30 and at its lower end to the shank of the hanger proper. Of course, in this form of the invention there is an absence of the spring 6 and its associated parts and yet the structure possesses all of the advantages possessed by the two previously described forms of the invention.

Having thus described the invention, what is claimed as new is:

1. In a bell cord hanger, a housing having an opening in its lower end, a spring arranged within the housing, and a hanger member having a portion normally seating in said opening, the spring being connected at its lower end to said hanger member and yieldably supporting the same against downward movement.

2. In a bell cord hanger, a housing having an opening in its lower end, a hanger member having a boss normally seating in said opening, and a spring connected at its upper end to the top of the housing and extending within the housing and connected at its lower end to the said hanger member and yieldably supporting the same against downward movement.

3. In a bell cord hanger, a hanger member, a member against which the upper end of the hanger member normally seats, and a spring connected to the hanger member and yieldably holding the same in engagement with said abutment member, and yieldably supporting the same against downward movement.

In testimony whereof I affix my signature.

FRANK J. BORER. [L. S.]

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