April 24, 1956 P. H. BLAIR 2,742,666

COMBINATION COVER AND VIBRATION DAMPENER FOR SPRING SASH BALANCES

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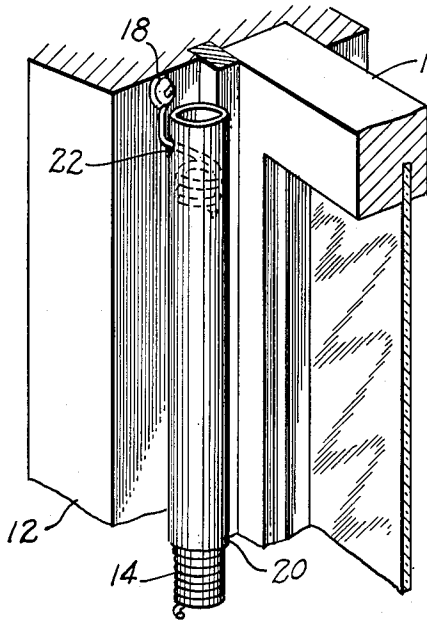


Fig. 2

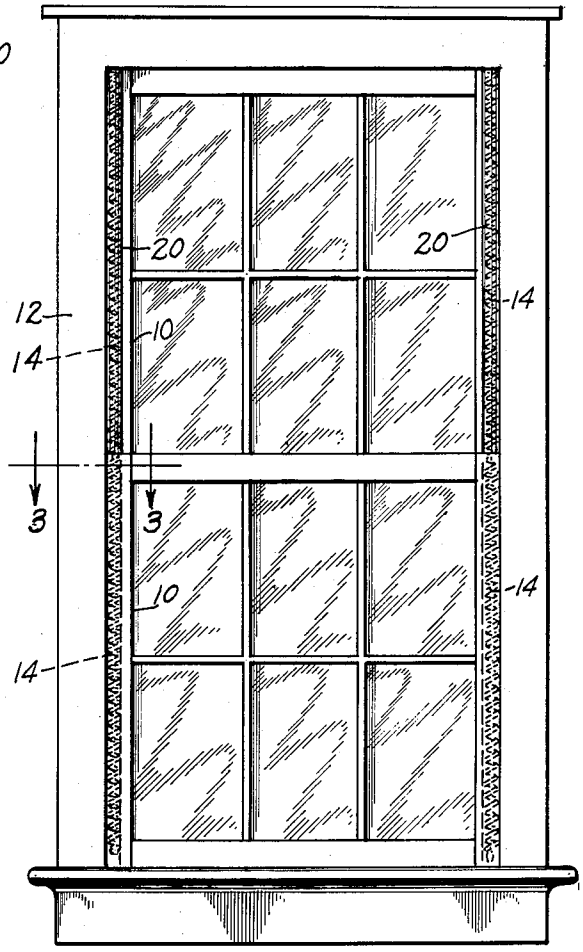


Fig. 1

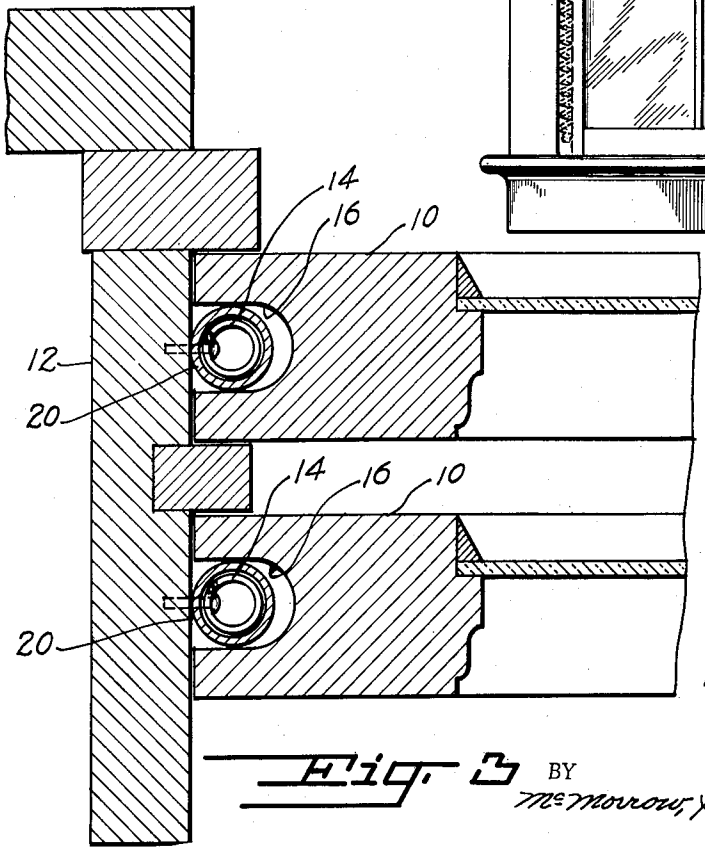


Fig. 3

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COMBINATION COVER AND VIBRATION DAMPENER FOR SPRING SASH BALANCES

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2 Claims. (Cl. 16—197)

This invention relates to spring balances for sliding or double hung window sashes, and more particularly has reference to a cover for a balance of this nature.

Tension spring sash balances have, of course, been in use for many years, and have more recently been supplied with and incorporated in various types of weather stripping, as well as in many pre-assembled window units. Sash balances of this nature have either been entirely exposed to view, or have been partially or wholly concealed in the various weather strips sometimes used in conjunction therewith.

In all installations of which I have knowledge, the spring sash balance tends to vibrate during use, as a result of which the balance forcibly strikes adjacent metal or wood surfaces of the window assembly. This tendency of the spring sash balance to strike adjacent surfaces, and vibrate, occurs whenever the associated sash is being opened or closed, the tendency toward noise and vibration further arising whenever ground vibrations occur due to passing traffic, etc. As a result, an audible, annoying noise results, which detracts considerably from the advantages deriving from the utilization of balances of this type.

The main object of the present invention, in view of the above, is to provide vibration and sound dampening means applicable to a spring sash balance for use in combination with said balance and with a sash and frame to which the balance is connected, it being proposed to so design a means of the character referred to as to eliminate the noisy operation and audible vibratory action of the conventional sash balance.

Another object is to provide a covering for a spring sash balance which can be manufactured at minimum of cost, but which will neverthless be wholly efficient in use, over an indefinite period of time.

Still another object is to provide a covering and vibration eliminator for spring sash balances which will conceal the sash balance from view, said covering being so designed as to be capable of manufacture in a selected color or shade to harmonize with adjacent sash or frame members, thereby to improve the appearance of the window assembly.

Yet another object is to provide a covering of the character referred to which can be readily assembled with a sash balance of the type stated, without requiring modification or redesign of said balance.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view of a window assembly equipped with spring sash balances having coverings formed in accordance with the present invention;

Figure 2 is an enlarged, fragmentary, perspective view of said window assembly, sash balance, and covering; and

Figure 3 is an enlarged sectional view on line 3—3 of Figure 1.

The reference numeral **10** has been applied in the drawing to conventional sliding or double hung window sashes,

used as movable parts of a conventional window assembly having a frame or jamb **12**. Associated with the sashes and frame are spring balances **14**, said balances being, per se, of a conventional form. Ordinarily, said balances are connected at their opposite ends to the frame and to the respective sashes, thus to control the movement of the sashes when the same are being shifted to open or closed positions.

It is common practice to mount the spring sash balances in elongated recesses **16** formed in the opposite sides or stiles of the sashes, the adjacent surface of the jamb closing said recesses as readily noted from Figure 3. Ordinarily, the spring sash balances are visible, reducing the attractiveness of the window assembly.

In accordance with the present invention, coverings are applied to the spring sash balances, said coverings extending a distance slightly greater than the total travel of the respective sashes, so that when either sash is in its lowest position, the spring balance thereof will be wholly concealed. The coverings, thus, extend from the upper ends **18** of the sash balances, the coverings being designated by the reference numeral **20** and having openings **22** receiving the eye portions **18** of the sash balances, to connect the coverings to the springs at their upper ends. At their lower ends, the coverings are not connected to the springs, thus to assure free spring action.

The coverings are of tubular formation, and are formed of any flexible, rubber-like material, thus to provide a sound dampening means fully enclosing the respective sash balances, which sound dampening means will be interposed between the balances and the adjacent surfaces of the sash and frame. The covers can, for example, be formed wholly of rubber material or from one of the rubber-like synthetic compounds. Alternatively, the covers can be formed of a fabric treated with a rubber-like, sound-deadening material.

Further, it is proposed that each cover **20** will be of a color or shade that will harmonize with the surrounding decorations, thereby to render the covers inconspicuous. The covers thus serve a two-fold purpose, namely, the deadening of sound and elimination of vibration, and the concealment of the sash balances from view.

The formation of the covers **20** with openings **22** in their side walls, adjacent the open ends of the covers, causes the covers to be positively connected to their associated sash balances at their ends, in such a way as to suspend the covers in spring-enclosing position. The covers do not expand or contract with the springs, however, and merely conceal the same while reducing vibration and sound thereof.

It is also thought to be an important characteristic of the invention that the covers do not require modification or redesign of conventional sash balances in any way. Further, the covers do not require modification or redesigning of the conventional sliding sashes or window frames. The covers can be readily positioned about sash balances already in use, with little difficulty, and can, of course, also be readily assembled with sash balances during the initial assembly of the window unit.

Although the covers enclose only a part of the lengths of the springs, they still discharge their function efficiently, since spring vibration and sound is more noticeable, ordinarily, in springs under slight tension than in springs under heavy tension. Further, since each cover is slightly greater in length than the total travel of its associated sash, it will always conceal the spring from view, in all positions to which the sash may be adjusted.

While the covers are usually "tubular" they need not be of circular cross section. They might, for example, be of D-shaped cross section, with their flat sides disposed against the frame. Or, they might be of rectangular cross section,

as for example when they are enclosed wholly or partially by weather strip devices of corresponding cross section. These and other modifications are thought sufficiently obvious as not to require special illustration herein.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. The combination, with a spring balance adapted to be anchored at its ends to a window sash and frame respectively, said balance having at its frame-anchored end a laterally projected terminal portion to be fixed to the frame, of a tubular cover formed of a flexible, sound-deadening material, said cover receiving the spring and having an opening formed in its side wall adjacent one end through which opening said terminal portion of the spring extends, for suspending the cover from said terminal portion in a spring-enclosing position, the other end of said cover being wholly free of its connections to the spring, whereby to permit expansion and contraction of the spring without accompanying expansion and contraction of said cover.

2. The combination, with a spring balance adapted to be anchored at its ends to a window sash and frame respectively, said balance having at its frame-anchored end a laterally projected terminal portion to be fixed to the frame, of a tubular cover formed of a flexible, sound-deadening material, said cover receiving the spring and having an opening formed in its side wall adjacent one end through which opening said terminal portion of the spring extends, for suspending the cover from said terminal portion in a spring-enclosing position, the other end of said cover being wholly free of its connections to the spring, whereby to permit expansion and contraction of the spring without accompanying expansion and contraction of said cover, the cover being formed from a single thickness of said material, the flexibility of the cover extending from end to end thereof and through the full circumference of the cover at all locations through its length.

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