May 12, 1959 F. E. GLASS, JR 2,885,725

SASH BALANCE

Filed June 10, 1957

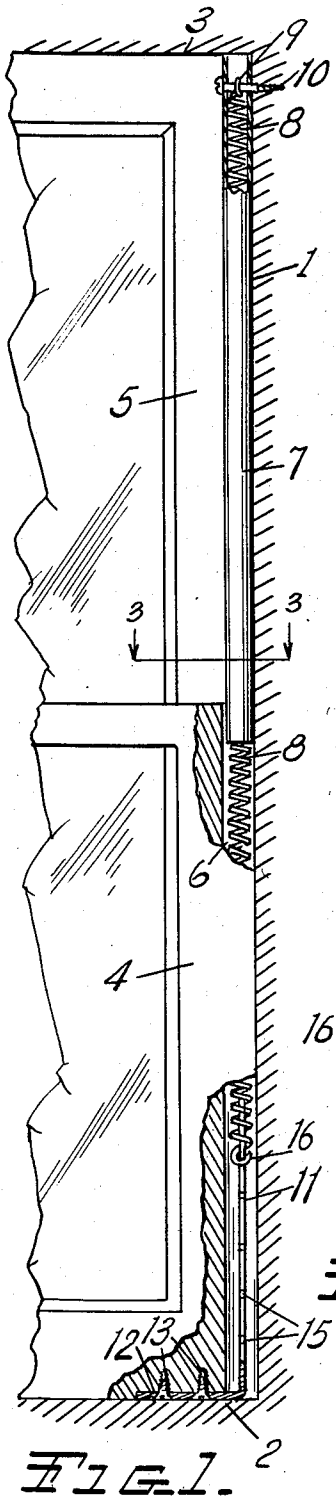


FIG. 1.

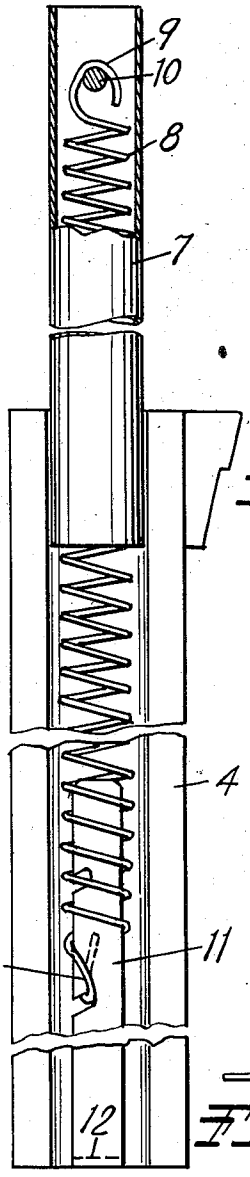


FIG. 2.

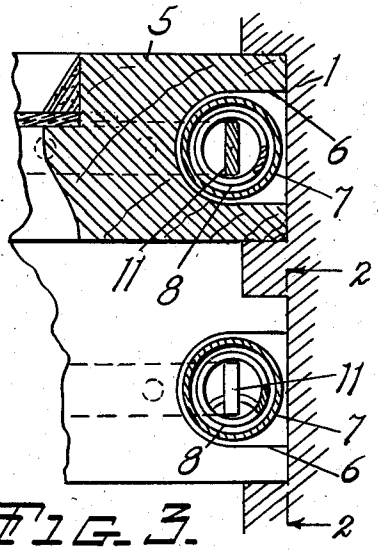


FIG. 3.

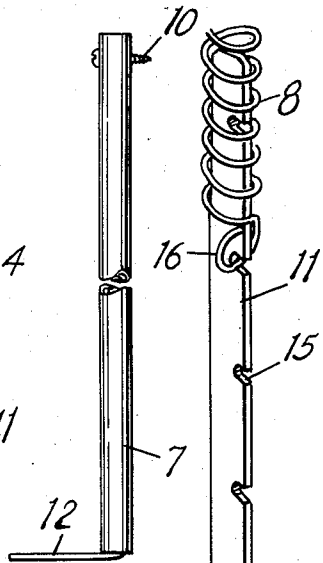


FIG. 5.

FIG. 4.

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SASH BALANCE

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7 Claims. (Cl. 16—197)

This invention relates to sash balances of the coil spring type and this application is a continuation-in-part of my application for Letters Patent, Serial No. 517,237, filed June 22, 1955, now abandoned. This continuing application is filed, as the drawings of that application are incomplete and in some respects inaccurate.

The main objects of this invention are,

First, to provide a sash balance of the coil spring type in which the spring is effectively supported and housed and at the same time the balance is capable of a wide range of adjustment for sashes of varying weight.

Second, to provide a sash balance structure which permits the adjustment of the balance to the requirements of a particular sash without removing the sash from the casing.

Third, to provide a sash balance having these advantages which may be installed as a unit.

Fourth, to provide a sash balance having these advantages in which the parts are simple and economical to produce and are quickly assembled.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a front elevational view with parts broken away and in vertical section, of one side of a double sash window with the counterbalance of my invention in operative relation to the window casing and sash.

Fig. 2 is an enlarged fragmentary view with the housing partially in vertical section illustrating the counterbalance in operative relation to a sash.

Fig. 3 is an enlarged fragmentary view in section on a line corresponding to line 3—3 of Fig. 1.

Fig. 4 is a perspective view showing the relation of the hanger member to the counterbalancing spring.

Fig. 5 is a fragmentary side elevational view of a counterbalance unit embodying my invention.

In the accompanying drawing 1 represents the side members of a window casing, 2 the sill thereof and 3 the top. These parts are conventionally shown. In Fig. 2 the casing side member is shown as one piece, but it will be understood that commercially the parting strip and commonly one or both of the stops are separate parts. 4 represents the bottom sash and 5 the upper sash. Both sashes have grooves 6 in their vertical edges. The counterbalance housing 7 of the embodiment illustrated is tubular and is of such dimensions as to be received within the groove in the edge of the sash. The counterbalance spring 8 is of the coiled type and is provided with a hook 9 at its upper end which engages the attaching screw 10 of the counterbalance housing 7, this attaching screw being threaded into the casing as shown in Fig. 1.

The sash hanger member 11 is desirably formed of a strip of metal and is of such dimensions as to telescope within the lower end of the spring, as is clearly illustrated in the drawing. This hanger member, in the embodiment illustrated, is formed of a strip of flat stock having a laterally turned foot piece 12 at its lower end adapted to engage the bottom edge of the sash as is shown in Fig. 1 and may be secured thereto as by means of the screws 13, the foot piece being provided with holes 14 for the screws.

The hanger member is provided with a series of vertically spaced notches 15 on one edge thereof with which the loop 16 on the lower end of the spring may be selectively engaged thus adapting the counterbalance to quite a wide variation in the weight of the sash and also to variations in the strength or load capacity of the spring.

In installing, it is only necessary to position the assembled counterbalance unit, as illustrated in Fig. 5, in proper relation to the casing to be received within the groove of the sash. When the sash is inserted in the frame it is positioned with its bottom rail above the foot piece of the sash engaging member foot piece 12 of the hanger member. If the hanger member is properly adjusted for the weight of the particular sash, the foot piece can then be secured to the sash. If, however, it is found that the balance requires adjustment for the particular sash, the sash can be removed and the hanger member adjusted to the weight of the particular sash, and this without disassembling the counterbalance unit from the casing. Further, in the event of a broken window pane the sash can be removed without dismounting the counterbalance and it remains in position to permit the engagement of the sash hanger with the members.

I have illustrated my invention in a highly practical embodiment thereof. I desire, however, to point out that the housing may be, and is commercially, of varying cross-sectional shapes and the mounting thereof is also varied in commercial embodiments. It is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired, and therefore such modifications are not illustrated or described.

Having thus described the invention, what is claimed as new and is desired to be secured by Letters Patent is:

1. A counterbalance for a sash having a grooved vertical edge, comprising a coil spring provided with support engaging means for its upper end, a sash hanger member telescopingly associated with the lower end of said spring and having longitudinally spaced openings with which said spring may be selectively engaged for adaptation to different weights of sash, said hanger member having a sash engaging member carried thereby, and a relatively fixed spring housing to which the upper end of said spring is supportedly connected adapted to be received within the groove of the sash, said spring being tensioned so that said sash engaging member engages the lower end of said housing when freed from said sash to provide means for extending the spring from housing to permit the adjustment of its connection to said hanger member without disengaging the spring from its supporting means or removing the housing.

2. A counterbalance for a sash having a grooved vertical edge, comprising a coil spring having support engaging means at its upper end and a loop at its lower end, a sash hanger member telescopingly associated with the lower end of said spring and having longitudinally spaced notches in an edge thereof with which said loop may be selectively engaged for adaptation to different weights of sash, said hanger member having a sash engaging member at its lower end, and a relatively fixed spring housing to which the upper end of said spring is supportedly connected adapted to be received within the groove of the sash, said spring being tensioned so that said sash engaging member engages the lower end of

said housing to be manually grasped when freed from said sash.

3. A counterbalance for a sash having a grooved vertical edge, comprising a coil spring, a sash hanger member telescopingly disposed within the lower end of said spring and having longitudinally spaced openings with which the lower end of said spring may be selectively engaged for adaptation to different weights of sash, said hanger member having a sash engaging member adapted to engage the bottom edge of a sash, and a spring housing to which the upper end of said spring is supportedly connected adapted to be received within the groove of the sash, said spring being tensioned so that said sash engaging member engages the lower end of said housing when freed from said sash.

4. A counterbalance for a sash having a grooved vertical edge, comprising a coil spring, a sash hanger member telescopingly disposed within the lower end of said spring and having longitudinally spaced openings with which the lower end of said spring may be selectively engaged for adaptation to different weights of sash, said hanger member having a sash engaging member and a spring housing to which the upper end of said spring is supportedly connected adapted to be received within the groove of the sash, said spring being tensioned so that said sash engaging member engages the lower end of said housing when freed from said sash.

5. A counterbalance for a sash having a grooved vertical edge comprising a coil spring, a sash hanger member telescopingly disposed within the lower end of said spring and having longitudinally spaced openings with which the lower end of said spring may be selectively engaged, said hanger member having a sash engaging member adapted to releasably engage the lower edge of a sash, and a spring housing adapted to be received within the groove of the sash.

6. A counterbalance for a sash having a grooved vertical edge comprising a coiled spring, a sash hanger member telescopingly and adjustably engaged with the lower end of the spring, said hanger member having a sash engaging member at its lower end adapted to releasingly engage the lower end of a sash, and a spring housing adapted to be received within the groove of a sash, the upper end of said spring being supportedly connected to said housing, said spring being tensioned so that said sash engaging member engages the lower end of said housing when freed from said sash providing means for extending the spring from the housing permitting the adjustment of said hanger member relative to said spring without disengaging the spring from its supported connection within the housing.

7. A counterbalance for a window sash comprising a coiled spring, a hanger member adjustably connected to the lower end of the spring for manual adjustment longitudinally thereof, said hanger member having a sash engaging member at its lower end adapted to releasably engage the lower end of a sash, and a housing for said spring and to which the upper end of said spring is supportedly connected, said spring being tensioned so that said sash engaging member engages the lower end of said housing when freed from a sash and provides means which may be grasped for manual adjustment of the hanger member relative to the spring without disengaging the spring from its supporting means within the housing.

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