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W. H. BRASKAMP

3,182,370

LOCKING DEVICE FOR A PULL CHAIN

Filed Aug. 9, 1963

FIG. 1

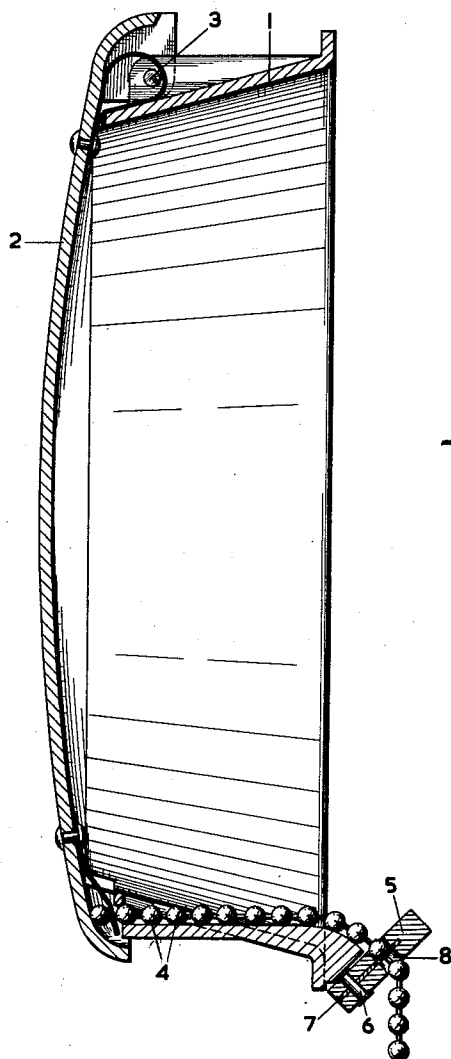


FIG. 2

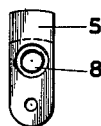


FIG. 3

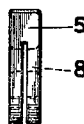


FIG. 4

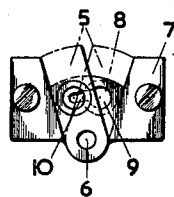
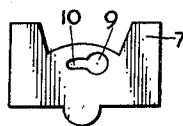


FIG. 5



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LOCKING DEVICE FOR A PULL CHAIN

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5 Claims. (Cl. 24—116)

This invention relates to locking devices for pull chains and more particularly for ball chains adapted for operating a spring loaded ventilator cover.

A device of this kind is known from the Dutch patent specification 99,132. In this known device the pull member passes through a rotatably mounted tube, of which the portion located on the operating side is bent downwards, said tube being provided with an opening through which engages a leaf spring, which is able to lock the pull member. If this tube is rotated by pulling the pull member sideways, the leaf spring is lifted, so that the pull member can be displaced. When the pull member is pulled so as to rotate the tube, it is, however, desirable for the pulling force to be exercised in the plane of rotation of the bent end. In fact, if this is not done, buckling and other damage will tend to occur, as consequence of which the locking device will operate insufficiently, if at all. Such devices frequently have to be operated by persons who do not exercise sufficient care in operating them, and the object of the invention therefore is to furnish a device which, while preserving ease of manipulation, cannot be damaged by careless or incorrect operation.

This object is achieved according to the invention by the feature that the pull member passes through an opening of a guide member, cooperating with a locking member, which is provided with an opening in the form of a keyhole for the pull member to be passed through and fixed respectively, which members can be displaced relative to each other transversely to the pull member. The locking member is preferably formed by an elastic plate and the guide member by a part with a central slot straddling the plate and made, for instance, of a flexible plastic material. The flexibility and elasticity of the two cooperating members ensure that jerks and shocks can be absorbed, while locking and unlocking respectively can be effected by a jerk in one direction or the other with a view to moving the guide member.

Preferably the guide member and the locking member are placed obliquely to the horizontal, so as to position these members in a favorable position relative to the chain as the chain is operated. The operating chain hanging vertically downwards is usually put in an oblique position by the operator, although it may remain in the vertical plane before the chain is moved sideways in one direction or the other.

The invention will now be described more fully by reference to the drawing, wherein:

FIGURE 1 is a vertical cross-section of a shutter with an operating member;

FIGURE 2 is a front elevation of the guide member;

FIGURE 3 is a side elevation of the guide member;

FIGURE 4 is a view of the assembled locking member and guide member, the guide member being shown in alternate position in dotted lines; and

FIGURE 5 is a view of the locking member.

The device shown in FIGURE 1 comprises a casing 1, to which at 3 a shutter 2 is pivotally attached in such a way that this shutter is forced into the opened position by a spring. This shutter 2 is kept in the closed position and in any desired partially opened position

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by means of the pull member 4, which consists of a ball chain. The chain comprises enlarged portions or balls and alternating narrow portions interconnecting the enlarged portions. This chain passes through the opening 8 of a guide member 5, which is made of a plastic material and which, as appears in particular from FIGURE 3, is provided with a central slot, by means of which this guide member straddles the central portion of a locking member 7 formed by a leaf spring, which member is fastened by means of screws to the casing 1. In this flat locking member an opening in the form of a keyhole is provided, the keyhole having a central axis extending generally longitudinally along plate 7. The keyhole opening is constituted of a large portion 9 and a narrow portion 10, the large portion being large enough to permit the passage of the balls of the chain of the pull member, while the narrow portion 10 fits between these ball and thus prevents displacement of the pull member. In the lefthand position of FIGURE 4 of the guide member the pull member therefore cannot be displaced, whereas such displacement is possible with the guide member in the right hand position. Both positions can be obtained by a short jerk to the left or to right of the pull member, the guide member 5 swivelling about the fastening 6 along a path parallel to the axis of the keyhole opening.

Instead of a swivelling fastening, a sliding fastening is also possible.

What I claim is:

1. In combination: a pull member and a device for detachably locking said pull member, said pull member including a plurality of alternating interconnected enlarged portions and narrow portions, said device comprising a locking member constituted of a plate provided with a keyhole opening constituted of a first larger opening and a second smaller opening, the keyhole opening having a central axis, said openings being respectively larger and smaller than the enlarged portions of the pull member whereby the latter will pass through the larger opening but will be restrained from passing through the smaller opening by the engagement of the narrow portion of the pull member therein, a guide member having a central slot, said locking member being accommodated in said slot such that the guide member straddles said locking member, said guide member having a hole with a diameter sufficient to permit passage of the pull member, said pull member extending through the opening in the guide member and means securing the locking member and guide member together for relative movement between first and second end positions along a path parallel to the axis of said keyhole opening, said hole in said guide member in the first position being coincident with the larger opening of the keyhole opening to thereby permit passage of the pull member, whereas said hole in the guide member in the second position is coincident with the smaller opening of the keyhole opening to thereby prevent passage of the pull member by the retention of the narrow portion of the pull member in the smaller opening of the keyhole hole opening.

2. The combination as claimed in claim 1 comprising means securing one of the members in fixed position, the means securing the locking member and the guide member together for relative movement comprising a fastener connecting said members together to permit pivotal movement of the other of said members about said fastener.

3. The combination as claimed in claim 2 wherein the locking member is fixed and the guide member is pivotal about said fastener.

4. The combination as claimed in claim 3 wherein the locking member is constituted by a leaf spring while the guide member is constituted of flexible plastic material.

5. The combination as claimed in claim 2 wherein the locking member and guide member are secured in oblique position relative to the horizontal, the guide member being perpendicular to the pull member.

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