A. S. LINDERHOLM.

WINDOW SASH ALARM.

APPLICATION FILED FEB. 23, 1915.

1,180,512. Patented Apr. 25, 1916.

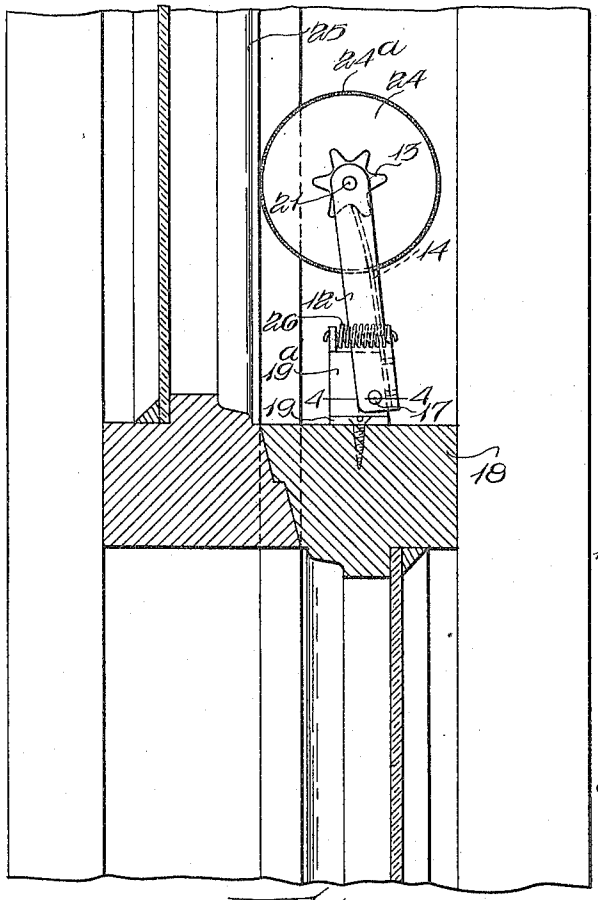


Fig. 1.

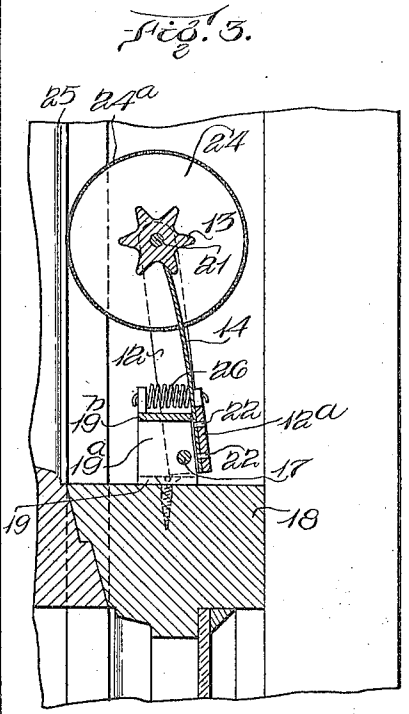


Fig. 3.

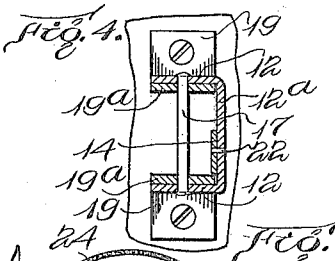


Fig. 4.

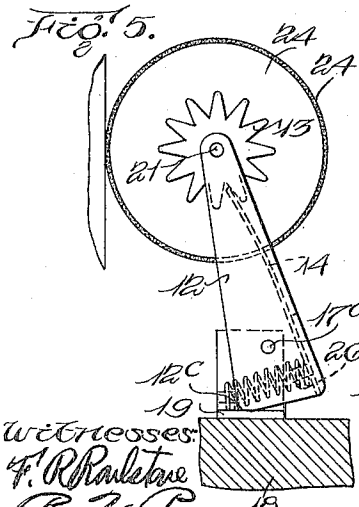


Fig. 5.

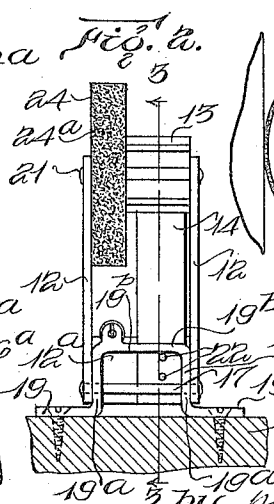


Fig. 2.

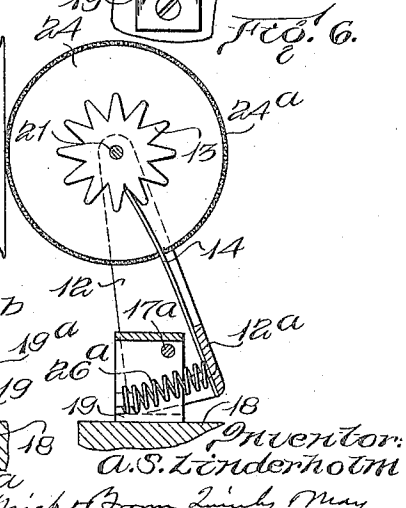


Fig. 6.

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WINDOW-SASH ALARM.

1,180,512. Specification of Letters Patent. Patented Apr. 25, 1916.

Application filed February 23, 1915. Serial No. 9,800.

To all whom it may concern:

Be it known that I, ADOLPH S. LINDERHOLM, a citizen of the United States, and resident of West Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Window-Sash Alarms, of which the following is a specification.

This invention has for its object to provide a simple and effective alarm attachment for use with sliding window sashes, to sound an alarm when either sash is moved in either direction, the attachment being attachable to the meeting-rail of the lower sash, and adapted to be actuated conjointly by the two sashes when either is moved to open or close it.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification: Figure 1 represents an edge view of an attachment embodying my invention secured to the meeting-rail of a lower sash and operatively related to an upright stile of the upper sash, the meeting-rails of the two sashes being shown in section; Fig. 2 represents a side view of the attachment, looking toward its inner side; Fig. 3 represents a section on line 3—3 of Fig. 2; Fig. 4 represents a section on line 4—4 of Fig. 1; Fig. 5 represents an edge view, and Fig. 6 a sectional view of a slightly modified embodiment of the invention.

The same reference characters indicate the same or similar parts in all the views.

My invention is embodied in a rattle of the so-called "watchman's rattle" type. Said rattle includes an elongated frame, a star wheel 13 rotatably mounted on one end portion of the frame, and a resilient tongue 14 rigidly attached at one end to the frame, its free end projecting between two teeth of the star wheel, the arrangement being such that when the wheel is rotated the tongue is alternately flexed and released by the teeth of the wheel, each release of the tongue permitting it, in assuming its normal form, to percussively strike a succeeding tooth. The rotation of the star wheel therefore causes a rattling sound like that of the well-known "watchman's rattle."

The rattle frame in the preferred embodiment of my invention shown by Figs. 1, 2, 3 and 4 is composed of two narrow elongated spaced-apart arms 12 preferably of relatively thick sheet or plate metal, connected at their inner ends by a cross bar 12^a. The inner ends of the arms are connected by a pivot rod 17 to a base which is adapted to be attached to the meeting-rail 18 of a lower sash. Said base is preferably composed of a metal strip bent to form ears 19 seated on and secured to the meeting-rail 18, uprights 19^a and a neck 19^b between said uprights, said neck bracing the uprights. The frame arms 12 are connected by the pivot 17 with the uprights 19^a.

The star wheel 13 is fixed to a shaft 21 which is journaled in bearings in the swinging ends of the frame arms, the star wheel being preferably made of hard wood for the sake of resonance.

The tongue 14 is preferably of any suitably resilient metal, such as hard rolled brass, and is attached at one end by rivets 22 to the frame neck 12^a. The tongue is relatively thin and adapted to be flexed by the revolving teeth of the wheel, each wheel springing the tongue from its normal shape and then releasing it. The tongue when released reacts and strikes the next tooth. The succession of blows caused by a somewhat protracted rotation of the star wheel causes a rattling sound which is sufficiently loud to constitute an effective alarm, particularly when the star wheel is made of wood.

To the star wheel is affixed a trundle roll 24 of sufficient diameter to bear on a track such as that formed by one face of a vertical stile 25 of the upper sash, said roll being preferably provided with a frictional tire 24^a. A contractile frame-biasing spring 26, attached at one end to the base above the pivot 17 and at the other end to the upper portion of the frame cross bar 22, forces the swinging end of the frame toward the stile 25 and holds the roll 24 in contact with its track with sufficient force to cause the rotation of the roll when either sash is moved in either direction relatively to the other. The teeth of the star wheel are so formed that they coöperate as described with the tongue in giving an alarm whether the wheel is rotated in one direction or the other.

The cross bar 12^a of the swinging frame constitutes a frame portion adapted to abut against the neck portion 19^b of the base

which constitutes an abutting portion complemental to the cross bar, said portions limiting the movement of the frame by the spring 26, so that in case the roll 24 is removed from contact with its track, for example by an extreme lowering of the upper sash, the roll will remain in position to again engage its track when the upper sash is sufficiently raised.

In the construction shown by Figs. 5 and 6 the pivot rod 17[a] that connects the swinging frame to the base is located above the frame biasing spring 26[a], the latter acting by expansion to press the roll against its track. The lower ends of the frame arms are formed at 12[c] to bear on the base ears 19 and constitute complemental abuting portions limiting the movement of the rattle frame by the spring.

It will be seen that by utilizing as the alarm a rattle of the described type, I materially simplify the construction and reduce the number of parts as compared with a device that includes a bell and a vibrating hammer. The attachment is self-contained and is installed wholly by screwing the base to the meeting-rail 18, there being no other part requiring attachment to the sash.

The spaced-apart frame arms 12 confine the star wheel and trundle roll against lateral displacement. The star wheel is of smaller diameter than the trundle roll, so that the outer end of the tongue 14 projects between and is guarded by the trundle roll and one of the arms 12, as shown by Fig. 2.

The trundle roll constitutes the widest portion of the device, the star wheel and tongue being located wholly in the space under the axis on which the wheel and roll rotate, so that the device is reduced to compact form and does not project from the inner side of the lower sash, and therefore does not interfere with a window shade or a curtain hanging close to said inner side.

Having described my invention, I claim:

1. A window sash alarm comprising a base adapted for attachment to the meeting-rail of a lower sash, an elongated swinging frame composed of two elongated spaced-apart arms pivoted at their inner end portions to the base and a cross-bar connecting said arms, a star wheel, a trundle roll co-axial therewith, said wheel and roll being connected for simultaneous rotation and journaled on the swinging end of the frame between said arms, a resilient tongue attached at one end to said cross-bar and projecting therefrom between the frame arms into engagement with the star wheel, and a spring connected with the frame and base and adapted to press the roll against an upper sash, the said roll and star wheel being confined against lateral displacement by the frame arms, and the star wheel being of smaller diameter than the roll, so that the outer end of the wheel-engaging tongue is guarded by said roll and one of said arms.

2. A window sash alarm comprising a base composed of ears adapted for attachment to a lower sash, uprights between said ears and a neck connecting and bracing said uprights, an elongated swinging frame composed of two elongated arms pivoted at their inner end portions to said uprights and spaced apart thereby, a cross-bar connecting said arms, a star wheel, a trundle roll co-axial therewith, said wheel and roll being connected for simultaneous rotation and journaled on the swinging end of the frame between said arms, a resilient tongue attached at one end to said cross-bar and projecting therefrom between the frame arms into engagement with the star wheel, and a spring connected with the neck portion of the base and with the cross-bar of the frame and adapted to press the roll against an upper sash, the said neck portion and cross-bar constituting complemental abutting portions which limit the movement of the frame by the spring.

3. A window sash alarm comprising a base composed of ears adapted for attachment to a lower sash, uprights between said ears and a neck connecting and bracing said uprights, an elongated swinging frame pivoted at its lower end to said uprights, a star wheel, a trundle roll co-axial therewith, said wheel and roll being connected for simultaneous rotation and journaled on the upper swinging end of said frame, a resilient tongue attached at its lower end to said frame and projecting upwardly therefrom into engagement with the star wheel, and a spring connected with the neck portion of the base and with said frame and adapted to maintain the roll under force against an upper sash, said frame being adapted to abut said base to limit the swinging movement of the frame by the spring.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ADOLPH S. LINDERHOLM.

Witnesses:
C. F. BROWN,
P. W. PEZZETTI.

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