

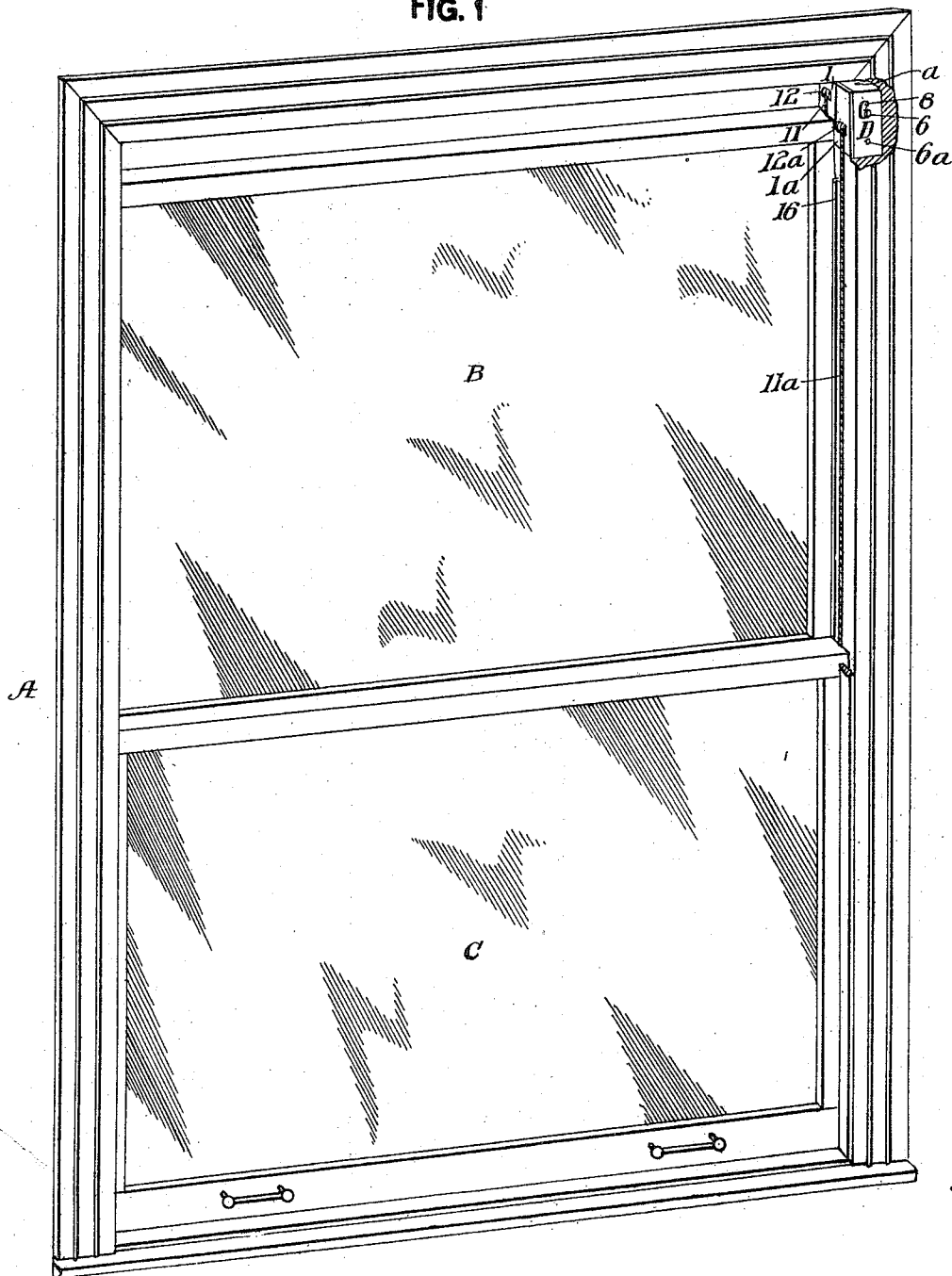
995,335.

M. DOBSON.
SASH SUSPENSION DEVICE.
APPLICATION FILED DEC. 30, 1910.

Patented June 13, 1911.

2 SHEETS—SHEET 1.

FIG. 1



WITNESSES:

P. P. Appleman,
H. W. Wakefield

INVENTOR.

Matthew Dobson
BY *Edward J. Lawrence*
ATTORNEY.

995,335.

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2 SHEETS-SHEET 2.

FIG. 3

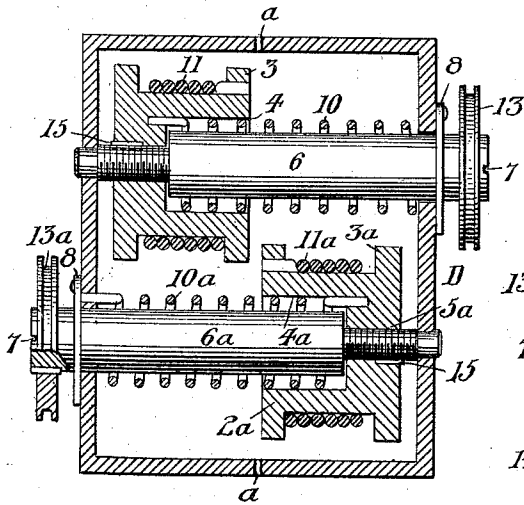


FIG. 2

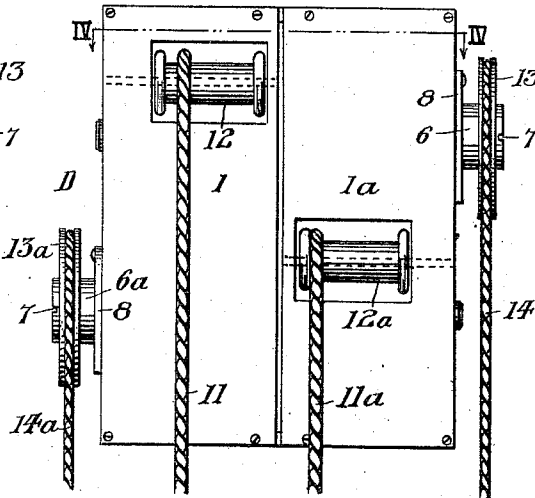


FIG. 4

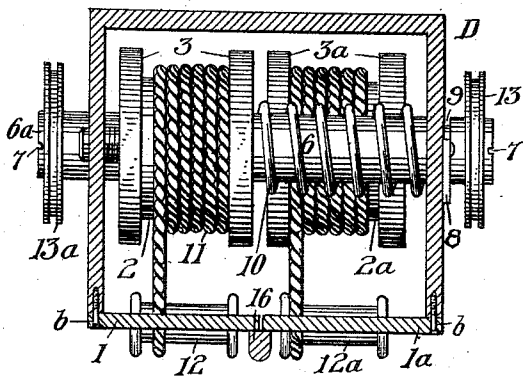


FIG. 5

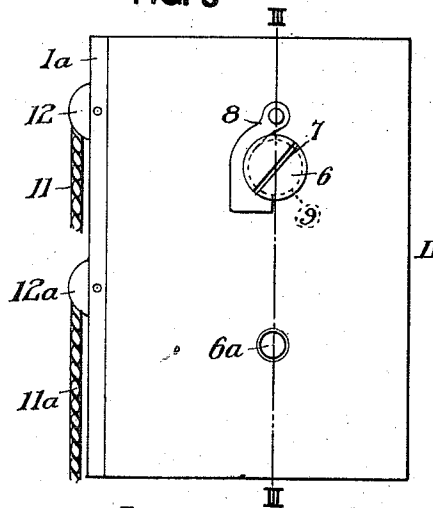


FIG. 6



FIG. 9

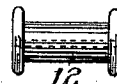


FIG. 10

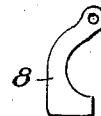


FIG. 7

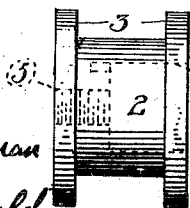
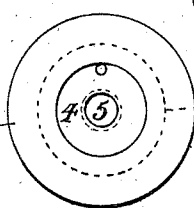


FIG. 8



WITNESSES:

J. P. Hoffman
B. Wakefield

INVENTOR.
Matthew Dobson,
BY Edward C. Lawrence,
ATTORNEY.

UNITED STATES PATENT OFFICE.

MATTHEW DOBSON, OF PITTSBURG, PENNSYLVANIA.

SASH-SUSPENSION DEVICE.

995,335.

Specification of Letters Patent. Patented June 13, 1911.

Application filed December 30, 1910. Serial No. 600,156.

To all whom it may concern:

Be it known that I, MATTHEW DOBSON, a citizen of the United States, and residing in the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Sash-Suspension Devices, of which the following is a specification.

My invention consists in a new and improved window sash suspension device, adapted for use as a substitute for the conventional cord and suspended weight.

Generally speaking, it consists of a sash-cord spool fixed upon a rotating shaft which is mounted, preferably, in a box or casing secured in the upper portion of the window frame. A spiral spring is coiled about said shaft, one end of the spring being secured to said spool and the other end to the box or some other fixed point. The strength and tension of the spring is regulated so that it acts upon the spool to balance the weight of the sash and prevent its accidental descent from any adjusted position.

Means are provided for preventing the longitudinal movement of the shaft when installed and I prefer also to provide a pulley keyed to the outer end of the shaft whereby the window may be conveniently raised or lowered by means of a belt or cord passing over said pulley and operatively connecting the same to a hand or power operated mechanism.

Novel construction and arrangement of parts will appear from the following description.

In the accompanying drawings, Figure 1 is a perspective showing a window frame, in which are mounted an upper sash and a lower shaft, provided with my suspension devices, the frame being partially broken away to show one of the suspension devices; Fig. 2 is a front elevation of the box, pulleys being provided on the outer ends of the spool shafts; Fig. 3 is a vertical section of the same along the line III—III in Fig. 5; Fig. 4 is a horizontal section of the same along the line IV—IV in Fig. 2; Fig. 5 is a side view of the box, looking in the direction of the arrow in Fig. 2, the pulley being omitted; Fig. 6 is a detail of one of the spool shafts; Fig. 7 is a detail of one of the spools, and Fig. 8 is an end view of the same looking in the direction of the arrow in Fig. 7; Fig. 9 is a detail of one of the rollers mount-

ed in the face plate, and Fig. 10 is a detail of the shaft locking latch.

The following is a detailed description of the drawings.

A is a window frame in which are mounted the upper sash B and the lower shaft C.

D is a metal box, one of which is secured in an aperture in the upper portion of each side of the frame by means of screws passing through holes *a—a* in the box D and engaging the material of said frame. The box D is provided with a removable cover preferably formed vertically in two plates 1 and 1^a which are of greater length than the height of the box D so that they may be fixed in place by means of screws passing through holes *b—b* in the ends of said plates and engaging the material of frame A.

In the box D are mounted a pair of sash-cord spools 2 and 2^a controlling, respectively, the upper sash B and the lower sash C. As these spools are of identical construction but placed in reversed position, I will proceed to describe the upper spool 2. The spool 2 is provided with a pair of circumferential flanges 3—3 and a bore of varying diameter 4—5. The smaller bore 5 is threaded, as shown.

6 is the spool shaft, having its ends journaled in holes of suitable size in the walls of box D. One end of shaft 6 is of reduced diameter and is threaded to engage the threaded bore 5 of spool 2, while the remainder of said shaft is of proper size to fit loosely the larger diameter 4 of said spool. The outer end of shaft 6 is provided with a slot 7 so that a screw driver may be used to install the same. To prevent longitudinal movement of the shaft 6, I provide a latch 8 pivoted on the outer wall of box D and engaging a circumferential groove 9 in the surface of shaft 6, thus holding said shaft in place but permitting its free rotation.

10 is a spiral spring mounted on shaft 6 and having one of its ends secured in a hole in the bore of spool 2, while the other end is secured in a hole in the wall of box D. The strength and tension of the spring is regulated so that it counterbalances the weight of the window sash.

11 is the sash-cord, one end of which is secured in the usual manner to the edge of sash B while the other end is led up over an anti-friction roller 12, mounted in face plate-1, is wound about the spool 2 and se-

cured at its end thereto to prevent slipping. It is evident that the spring 10 counterbalances the sash so that the sash may be raised or lowered with ease and will maintain any adjusted position.

In the case of heavy windows or windows placed at such height that they cannot be raised or lowered by grasping the sash in the usual manner, as in churches or public buildings, I find it convenient to raise or lower the sash by rotating the shaft 6. For this purpose I key or otherwise secure a pulley 13 upon the outer end of shaft 6, which pulley may be engaged by a cord or belt 14 operatively connected to a hand or power operated mechanism, not shown. In such cases I prefer to provide some means for preventing the spool 2 from unscrewing from shaft 6, such as a key 15 engaging said shaft and said spool. The lower spool, 2^a, is mounted in a manner the reverse of that of spool 2, so as to bring spool 2^a in the proper horizontal position. Shaft 6^a, latch plate 8^a, spring 10^a, pulley 13^a and cord 14^a are similar to the corresponding elements in the installation of spool 2. The sash-cord 11^a is attached to and wound about the spool 2^a, led over a roller 12^a mounted in face plate 1^a, and is attached in the usual manner to the edge of the sash C.

In installing the box D in the frame, the plates 1 and 1^a are secured in place, as shown and the strip 16, which is secured to the frame and interposed between the sash B and C, is carried up over the abutting edges of said plates, concealing their juncture but not interfering with their re-

moval when desired. When it is desired to gain access to either spool, as for the installation of a new sash-cord or for any other purpose, the proper plate 1 or 1^a may be removed without disturbing the other spool or exposing the mechanism thereof unnecessarily. Where but one sash is to be supported, as is frequently the case with small or ornamental windows, I need provide but one spool, 2, and the face plate may be constructed in one piece, instead of two as shown.

My invention is simple, compact and strong. In case the spring breaks or becomes weakened, the same may be replaced without difficulty. The box D is practically dust proof and is much more inconspicuous than the devices now in general use. I avoid the rattling and banging of the weights when the sash is raised or lowered rapidly, and the great inconvenience of installing a new cord in the case of a break.

What I desire to claim is—

A sash suspension device composed of a box, a shaft rotatably mounted therein, a sash-cord spool fixed on said shaft, a spiral spring coiled about said shaft, one end of said spring being secured to said spool and the other end thereof being secured to said box, a removable cover for said box, and a cord roller mounted in said cover.

Signed at Pittsburg, Pa., this 24th day of December 1910.

MATTHEW DOBSON.

Witnesses:

A. W. FORSYTH,
EDWARD A. LAWRENCE.