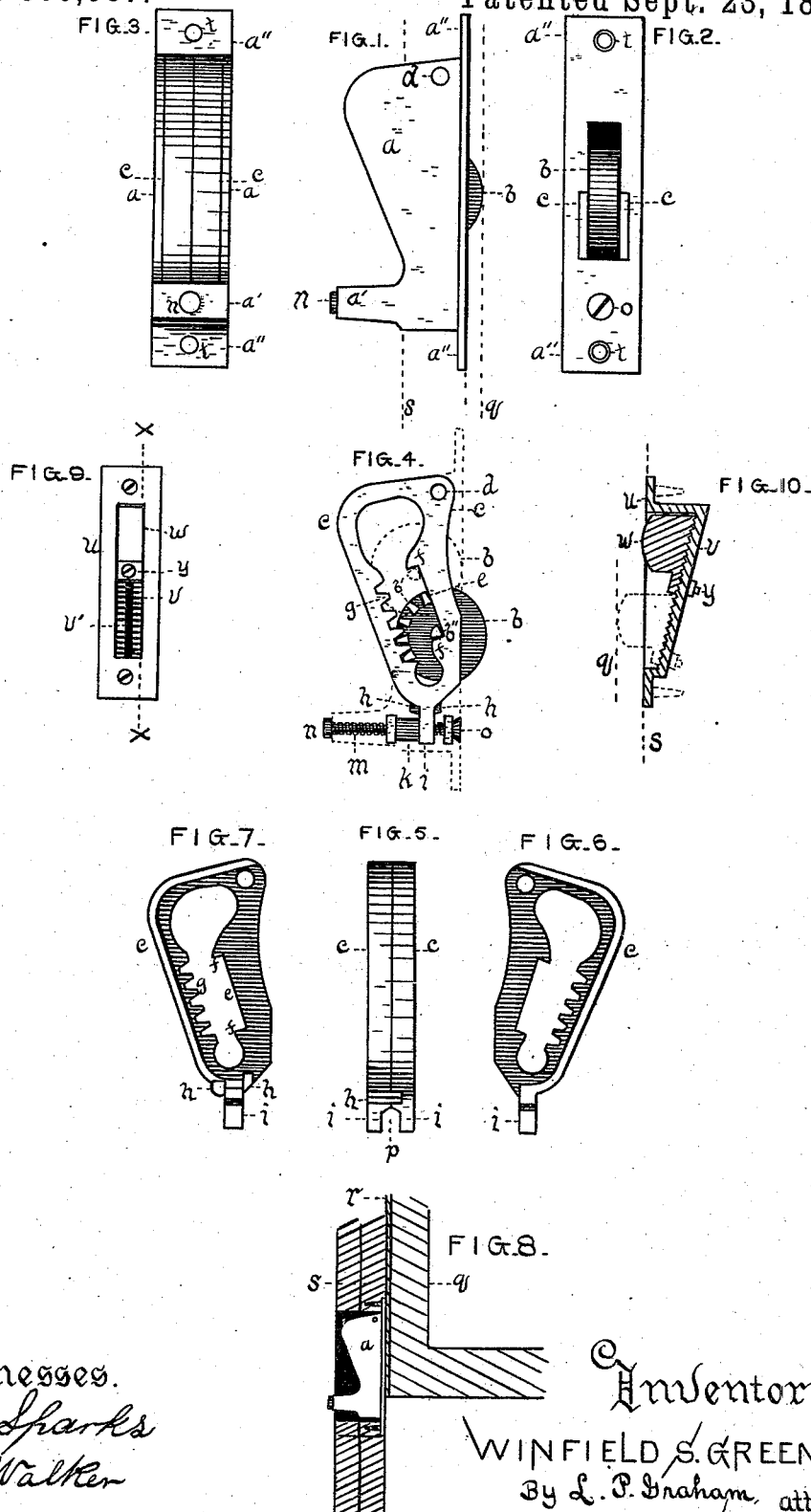


(No Model.)

W. S. GREENING.
AUTOMATIC SASH HANGER.

No. 305,687.

Patented Sept. 23, 1884.



Witnesses.
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UNITED STATES PATENT OFFICE.

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AUTOMATIC SASH-HANGER.

SPECIFICATION forming part of Letters Patent No. 305,687, dated September 23, 1884.

Application filed April 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. GREENING, a resident of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Automatic Sash-Hangers, of which the following is a specification.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side view of my device. Fig. 2 is a face view, and Fig. 3 a rear view, of the same. Fig. 4 is a side view of the internal mechanism. Figs. 5, 6, and 7 show details of the internal mechanism, and Fig. 8 shows my device in its proper relation to the window sash and frame.

a a' a'' represent the outside frame or casing of my device.

c is a pivoting-frame located in frame *a*.

d shows a pintle in casing *a*, on which swinging frame *c* is pivoted.

b is a cam or pulley located in frame *c*, and provided with central lateral projections, *b'*, and circumferential lateral projections *b''*.

e f f' show a configuration of frame *c*, that limits the motion of cam *b* through projections *b''*.

g are teeth in frame *c*, which engage projections *b'* of pulley *b*.

As shown in Figs. 5, 6, and 7, frame *c* is composed of two pieces, Fig. 6 representing one, Fig. 7 the other, and Fig. 5 the two combined. One of the sections of frame *c*, Fig. 7, is provided with projections *h h'*, that engage the opposing section, Fig. 6, and co-operate with pintle *d* to secure said sections from parallel misplacement. Cam *b* has projections *b' b''* on both sides in directly opposing positions. The extension *i i'* of frame *c* has a recess, *p*, that receives adjusting-screw *o m*.

k is a spring on screw *m o*, that fits against extension *i* of frame *c*. Head *o* of screw *m* has a bearing in face *a''* of frame *a*, as shown in Fig. 2, and an enlargement, *n*, is formed on the end of screw *m* and fits against the exterior of extension *a'*.

The device is attached to the window-frame by means of screws *t t'* in face *a''*, the countersinking, &c., of the frame being accomplished substantially the same as when ordinary weight-pulleys are attached.

In Fig. 8, *s* represents the window-frame, *q*

the sash, and *r* a strip of hard wood inserted in said sash as a bearing for pulley *b*.

My device is attached to the frame of the window, as indicated, with face *a''* flush with the surface of the same. As the sash is elevated pulley *b* turns upward and inward, as indicated by dotted lines in Fig. 4, thereby permitting said sash to ascend freely. As the sash descends the pulley, operated by friction and the force of gravitation, rolls downward and outward against the sash and retards the downward motion of the same. By adjustment of screw *m* the retarding effect of the pulley on the sash may be varied from an absolute stop to an almost imperceptible obstruction. The function of spring *k* is to equalize the pressure of the pulley while passing over obstructions of various kinds, and to make possible the practical operation of my device in windows the sides of which are not absolutely parallel.

As indicated in Fig. 8, my device is attached to the frame in such a position that when the sash is at its greatest height access may be had to adjusting-screw *m o*, thereby making it possible to vary the retarding pressure of the pulley at any time.

Practical directions for applying are as follows: Raise both sashes as high as they will go, mark the jamb at the bottom of each, then remove both sash. Fit the hangers as you would ordinary axle or sash pulleys, with the bottom of the face-plate about one and three-fourths inch below the marks, joint the sash with sides as near parallel as possible. If the sash is very heavy, place a hanger on each side of a sash, making four to the window. After the sash and stops are replaced raise the sash and adjust screw *m* until it works to suit. Whenever but one hanger is used to a sash, it will be found advantageous to attach to the frame at a point opposite the hanger an adjustable guide that can be made to adapt itself to loose or tight fitting sash, and which will always oppose a friction-surface to the pulley of the hanger, and thereby make the motion of the sash more uniformly smooth.

The device I prefer to use for the above-mentioned purpose is shown at Figs. 9 and 10 of the drawings, Fig. 9 giving a face view of

the same, while Fig. 10 is a sectional view of Fig. 9 on dotted line *x x*.

As intimated above, the guide device is attached to the window-frame at a point opposite the hanger, the said attachment being made in the same manner as the previously-described attachment of said hanger.

The guide consists in a corrugated plate, *v*, inclined to the perpendicular surface of the jamb, an adjustable friction-block, *w*, and a set-screw, *y*, adapted to hold the friction-block in various positions on the inclined plane. The inclined plane is provided with a suitable frame, *u*, and secured to the sash by screws, as indicated. After the guide is attached to the frame of the window in the position and manner specified, friction-block *w*

is adjusted to compensate for play between the sash and frame and secured in position by set-screw *y*, which has free motion in slot *v'*.

The dotted lines in Fig. 10 show the extreme projection of block *w*, while the solid lines indicate the opposite extreme.

I claim as new and desire to secure by Letters Patent—

The combination of rigid frame *a a' a''*, pivoting-frame *c*, provided with teeth *g* and recess *e*, friction-pulley *b*, provided with projections *b' b''*, and adjusting-screw *m o*, as and for the purpose set forth.

WINFIELD S. GREENING.

Attest:

I. D. WALKER,
L. P. GRAHAM.