

(No Model.)

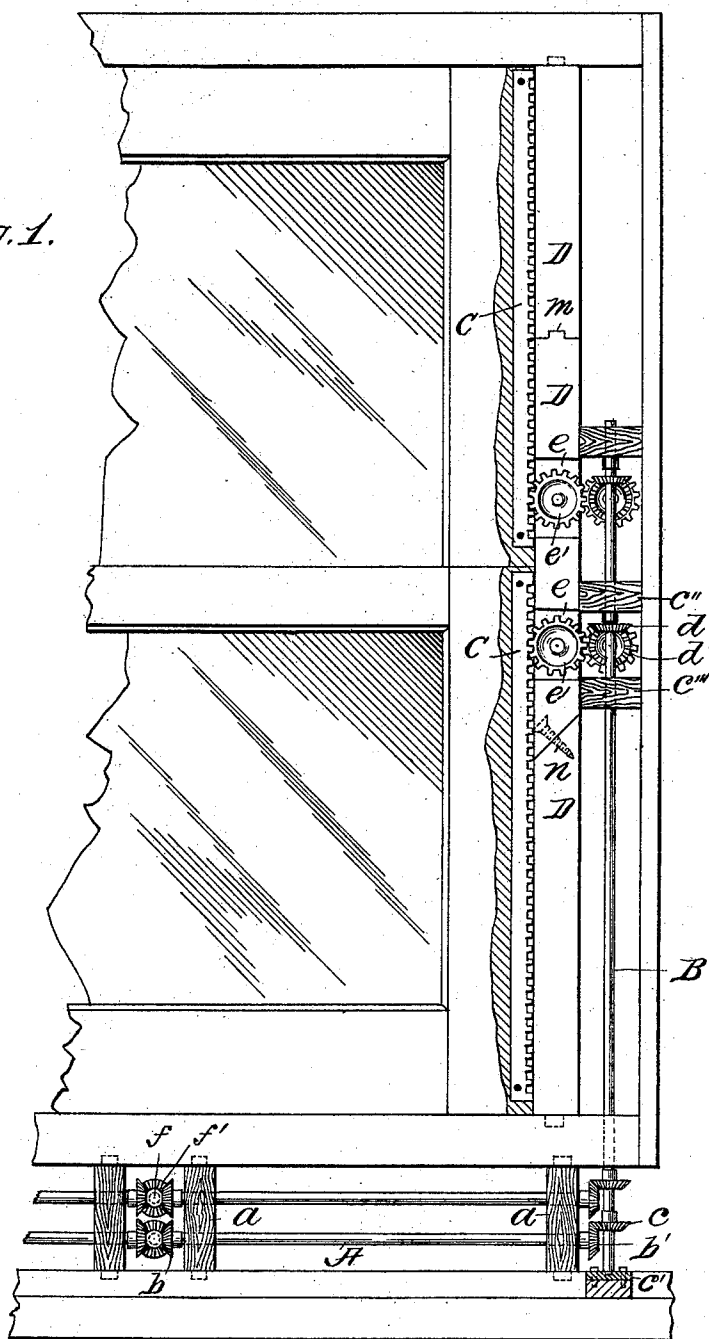
3 Sheets—Sheet 1.

J. W. T. GILLIAM.
SASH FASTENER AND OPERATOR.

No. 513,388.

Patented Jan. 23, 1894.

Fig. 1.



Witnesses:

Mark M. Decker
E. E. Meares

Inventor,
John W. T. Gilliam,

By J. W. Barker
Attorneys.

(No Model.)

3 Sheets—Sheet 2.

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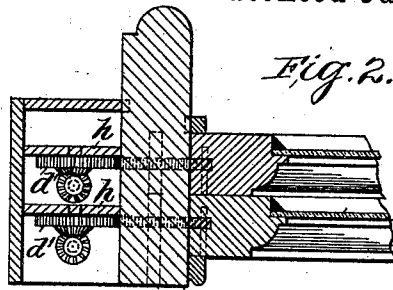


Fig. 2.

Fig. 3.

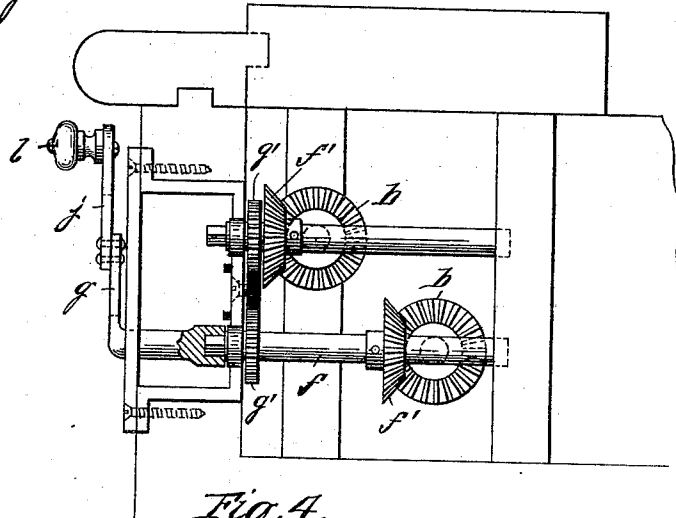


Fig. 4.

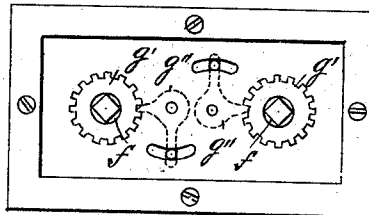
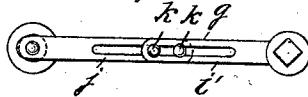


Fig. 5.



Witnesses:

Mark M. Becker

E. S. Meares.

Inventor,
John W. T. Gilliam

By *Frederick Barker*

Attorneys.

(No Model.)

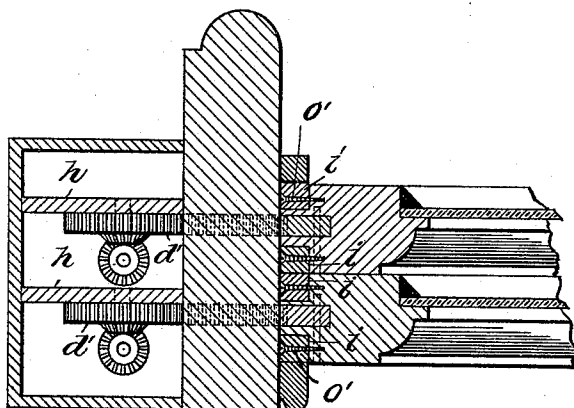
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Patented Jan. 23, 1894.

Fig. 6.



Witnesses:

Mark M. Decker
& C. Meares

Inventor

John W. T. Gilliam,

By J. W. Barker

Attorney.

UNITED STATES PATENT OFFICE.

JOHN W. T. GILLIAM, OF BALTIMORE, MARYLAND.

SASH FASTENER AND OPERATOR.

SPECIFICATION forming part of Letters Patent No. 513,388, dated January 23, 1894.

Application filed May 12, 1893. Serial No. 474,034. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALKER TABB GILLIAM, a citizen of the United States, residing in the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Sash Adjusters, Fasteners, and Antirattlers, of which the following is a full, clear, and exact specification.

My invention consists in certain improved devices applied to windows whereby the opening, closing, and adjusting of the window may be facilitated, together with a means of preventing windows from rattling.

With these objects in view I will now proceed to describe my said invention in detail, reference being had to the accompanying drawings, in which like letters of reference indicate corresponding parts in the several figures.

Figure 1 is an interior view of a window and frame partly in section, and embodying my improvements. Fig. 2 is a transverse section of the same. Fig. 3 is a side elevation of the crank, shaft, and bevel gears employed, shown in detail. Fig. 4 is a front elevation of the fastening device. Fig. 5 is an inverted plan view of the adjustable crank, and, Fig. 6 is a transverse section of a window and frame showing the anti-rattling device in position.

In Fig. 1, I have shown the cross rails broken away, the box uncovered, and the casings removed, to illustrate the adjustment intact.

The operating mechanism consists mainly of a shaft A running horizontally underneath the sill, and journaled in upright supports *a*, the said shaft being provided at both ends with suitable bevel gears *b b'*, the latter meshing with a bevel gear *c* on an upright shaft B. The said shaft B rests at its lower end in a suitable supporting plate *c'*, and is kept in a vertical position by braces *c''* and *c'''*. To the upper end of the said shaft B is another bevel gear *d*, which meshes with gear *d'*, which is a straight gear on its outer circumferential surface.

Secured in the sash is a suitable rack C.

The stile D is mortised out at *e* and contains a pinion *e'*, which meshes with the straight gear *d* and also with the rack C.

A short shaft *f* runs inwardly situated preferably under the sill (best shown in Fig. 3), and is provided with a bevel gear *f'* which meshes with the bevel gear *b* on the shaft A. The outer end of the shaft *f* is squared to receive a crank *g* for operating said shaft. To run the sash up or down, as the case may be, the crank is turned, communicating motion to the shaft *f*, gears *f'* and *b*, shaft A, gears *b'* and *c*, shaft B, gears *d d'*, and pinion *e'*, which pinion *e'* causes the rack C to move up or down carrying with it the sash.

As the mechanism for operating both the upper and lower sash is the same I have only described the manner of operating one.

Secured to the shaft *f* near its outer end are two ratchet wheels *g'* which are adapted to be engaged by pawls *g''* for the purpose of preventing the mechanism from being revolved, thereby locking the sash in any desired position. The straight gears *d'* are secured to cross pieces *h* as shown in Figs. 2 and 6.

The construction of the operating crank is as follows:—The bar is formed in two separate pieces *i'* and *j* each of which is slotted, the parts held together by screws or bolts *k*, thereby admitting of the leverage being lengthened or shortened. One, or the part *i'*, is provided with an end similar to a clock-key which is adapted to fit over the squared end of the shaft *f*, the opposite end having a handle *l* for convenience of the operator. It will be seen that a double set of the above described shafts and gears is employed, one set on each side of the sash. This is for lifting and lowering the sash evenly, thus preventing any binding of the sash in the frame. The section of stile D containing the pinions *e'* has a tenon *m* cut on its upper end to keep it in place, while the lower end is beveled and held in place by screws *n*. This allows of constructing a ready adjustment of the parts.

My anti rattling device *i* is composed of rubber or other suitable and flexible sound deadening material of suitable dimensions, and is set into the edge of the sash near the top and bottom thereof, being allowed to project over the edges somewhat so as to have a bearing against the beads or weather strips.

It is held in position by screws *o'* or in any other suitable manner.

As will be seen the device is simple in construction and efficient in its working, and is
5 inexpensive to manufacture.

Having now described my invention, I declare that what I claim is—

1. The combination with a window frame and sash, of horizontal and vertical shafts
10 provided with bevel gears, the said shafts being journaled in bearings secured to the said frame, pinions journaled in the stiles of the frame and meshing with a rack secured in the edges of the sash and also with the gears
15 which mesh with the bevel gear on the vertical shafts, substantially as and for the purposes described.

2. The combination with the sash and frame of a window, of horizontal and vertical shafts
20 *A* and *B* secured in suitable bearings in the frame, the said shafts being provided with bevel gears *b*, *b'*, *c*, and *d*, a driving shaft *f* running transversely of the said shafts *A* and *B*, a bevel gear *f'* on the said shafts *f* which
25 meshes with corresponding gears *b* on the shafts *A*, the said shafts *f* being arranged to be turned by a crank, and connections between

the sash and pinion *d*, substantially as shown and described.

3. In a sash adjuster and holder, the combination with a window frame and sash having racks in its sides, of vertical shafts journaled at the sides of said sash, and gearing between the sides of said sash and said shafts, with horizontal shafts located under the window sash, and placed end to end, a transverse shaft located at the meeting ends of said horizontal shafts, gears on the horizontal shafts respectively meshing with gears on the transverse shaft, whereby the latter can turn the former shafts conjointly, and gearing connecting the horizontal shafts with the vertical shafts, whereby both sides of the sash will be lifted simultaneously, and with a lock for holding the shafts from rotation, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of April, 1893.

J. W. T. GILLIAM.

Witnesses:

FELIX R. SULLIVAN,
J. J. W. WILSON.