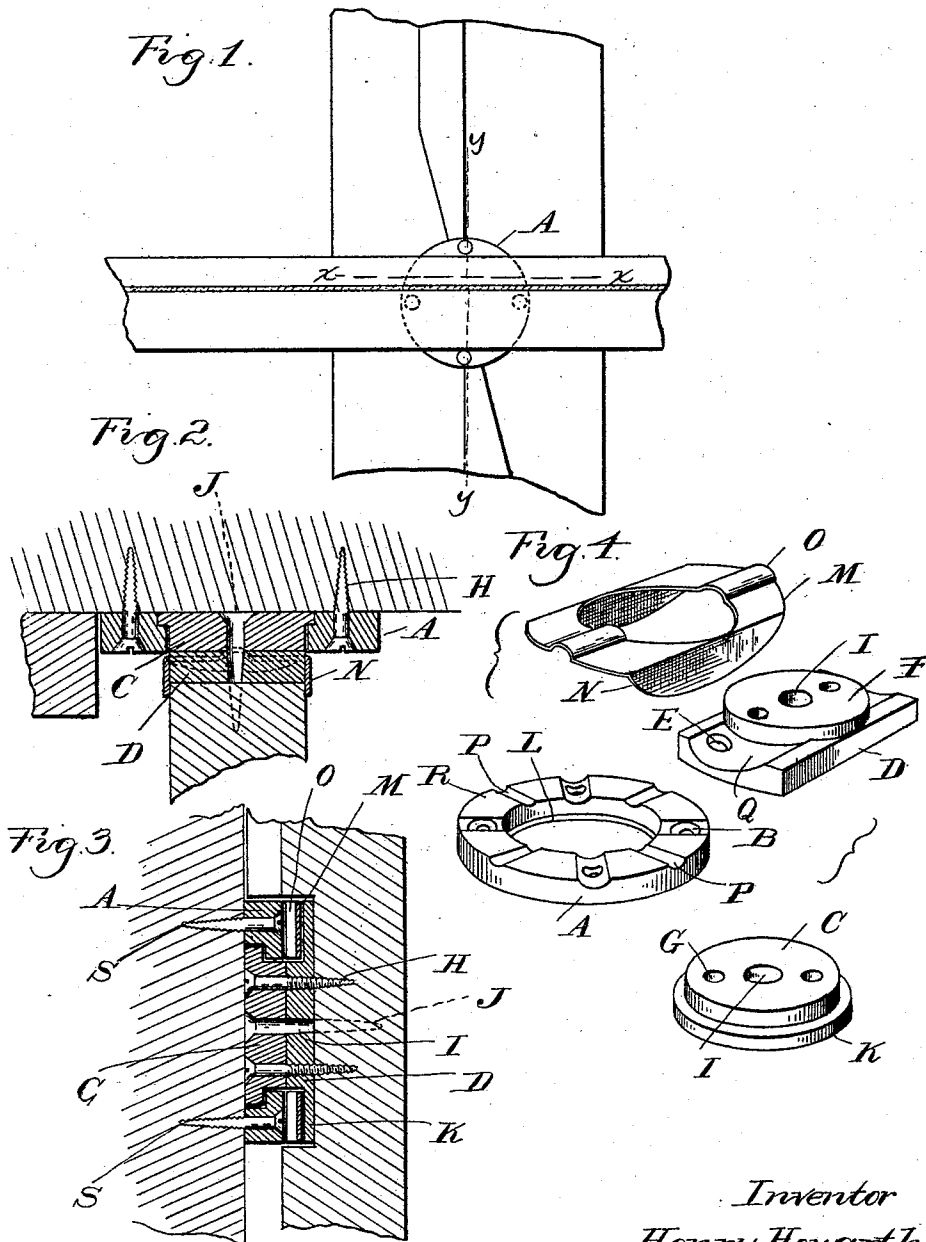


(No Model.)

H. HOWARTH.
TRANSOM PIVOT.

No. 498,551.

Patented May 30, 1893.



Witnesses
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By *W. D. Maguire* Atty.

UNITED STATES PATENT OFFICE.

HENRY HOWARTH, OF DETROIT, MICHIGAN, ASSIGNOR TO THE HOWARTH
REVERSIBLE SASH AND SASH CENTER COMPANY, OF SAME PLACE.

TRANSOM-PIVOT.

SPECIFICATION forming part of Letters Patent No. 498,551, dated May 30, 1893.

Application filed October 19, 1892. Serial No. 449,358. (No model.)

To all whom it may concern:

Be it known that I, HENRY HOWARTH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Window-Sash Centers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in window sash pivot or sash centers, and the invention consists in the peculiar construction, arrangement and combination of various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical section through a detached portion of a window sash, showing my improved center as applied to a rabbeted joint. Fig. 2 is a vertical section thereof on line *yy* Fig. 1. Fig. 3 is a cross section thereof on line *xx* Fig. 1. Fig. 4 is a detachable perspective view of the parts composing the sash center.

The object of my invention is to so construct a sash center that the window frame will hang from a wide bearing and turn with the least possible strain, and so that the joint at all times will be tight, and further so that both the members may be applied to the sash before it is secured in position in the frame, after which the sash is then placed in position and one member secured to the frame, thus facilitating the hanging of the sash, as will be more fully hereinafter explained.

A is a ring having suitable apertures B, by means of which it may be secured to the sash frame, the ring being of such diameter that the apertures B will be separated a distance slightly greater than the thickness of the window sash.

C is a stud or pin of a size to fit within the ring.

D is a plate of a width corresponding substantially to the width of the window sash and having suitable apertures E by means of which it may be secured thereto. This plate is provided with a raised circular portion F which forms a complementary part of the stud C when the two are placed together. The stud C and disk F may be made integral if desired, but I prefer to make them separate

and provide them with complementary apertures G having screws H by which they are both secured to the sash, as shown in Fig. 3. They may also be provided with a central aperture I adapted to receive a screw J. This however may be omitted. When the disk F and stud C are made in separate parts, I form the stud with an annular flange K on its inner end adapted to engage in an annular gain or notch L in the inner edge of the ring, this flange tending to hold the ring in fixed relation to the plate D so far as lateral movement is concerned.

M is a washer of a shape corresponding substantially to the shape of the plate D and having a central aperture corresponding to the size of the stud C which it encircles. This washer is provided with flanges N adapted to pass down over the side of the sash, as shown in Fig. 2, to hold it in fixed relation to the plate D and it is provided centrally of its flat face with the corrugations O extending away from that plate and adapted to enter radial notches or grooves P in the ring A. The washer is made of spring metal and opposite the corrugations in the plate D the plate is cut away at Q to allow of the depression of the washer, when the parts are turned so that the corrugation O rests upon flat portions R between the grooves P of the ring.

The parts being thus constructed they are combined and arranged as follows: The sash and frame being provided with the usual rabbeted joint, the operator first assembles the parts (at the proper point upon the sash) as shown in Fig. 3, the plate resting against the sash, the washer upon the plate with one of the corrugations in one of the grooves P, the ring resting upon the washer and the stud C within the ring with its flange entering the gain or notch L. The operator then secures the center to the sash by means of the screws H and J. The sash being turned to its vertical position two of the screw holes B will be exposed at each side thereof, and the operator drives in screws S and then turns the sash at right angles to its first position exposing the other two apertures and puts in the remaining screws S. Thus it will be seen that the ring is secured to the window frame and the stud C and plate D are fixed to the sash,

the parts being held together in relation to the sash by means of the screws H and J, and in turning, the weight of the sash will be carried on the stud turning in the ring, thus giving a wide bearing or pivot and prevent possibility of breakage and reducing the wear to the minimum. In turning the sash upon its pivot, the corrugation O of the washer will be more or less flattened as it is moved from out the grooves P and upon the flat spaces R between. In this position the washer will be forced into the cut away portion Q of the plate so as to prevent shearing off of the corrugations or other breakage of the parts. The spring washer not only makes an air and dust tight joint when thus used but also interlocking with the grooves holds the sash at any desired point of its adjustment.

What I claim as my invention is—

1. In a sash center, the combination of a ring adapted to be secured to the sash frame between the ends of the rabbets, said ring being of a diameter greater than the thickness of the sash, a plate secured to the sash of a width substantially the width of the sash and a stud on said plate entering the ring, substantially as described.

2. In a sash center, the combination of a ring adapted to be secured to the frame and formed with indentations in its outer face a plate adapted to be secured on the sash, a pivotal connection between the plate and ring and a spring washer between the ring and plate formed with projections engaging in the indentations of the plate, substantially as described.

3. In a sash center, the combination of the sash member and the frame member pivoted

together and provided with interlocking flanges adapted to prevent the two from separating and a spring washer between the two, formed with corrugations on its face substantially as described.

4. In a sash center, the combination of the sash member and the frame member formed with a pivotal stud having a flange adapted to hold the two from separating, of radially arranged grooves on the frame member, a plate embracing the pivotal stud and secured to the sash to turn therewith, radially arranged elastic corrugations on said plate adapted to enter, said groove and hold the sash in its adjusted position, substantially as described.

5. In a sash center, the combination of the sash member comprising a plate D having the central stud F formed thereon, the complementary portions C of the stud having the annular flange K of the ring A forming the frame member and having the interior gain in which the flange K is adapted to engage of the screws H for securing the two parts of the stud together and for securing the sash member to the sash, the plate M having the ears N engaging the sides of the sash, the corrugations O, the ring having corresponding grooves for said corrugations and the plate provided with cut-away portions Q, the parts being arranged substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY HOWARTH.

Witnesses:

M. B. O'DOGHERTY,
N. L. LINDOP.