

J. D. Hall,

Sash Fastener.

N^o 44,770.

Patented Oct. 18, 1864.

Fig 1

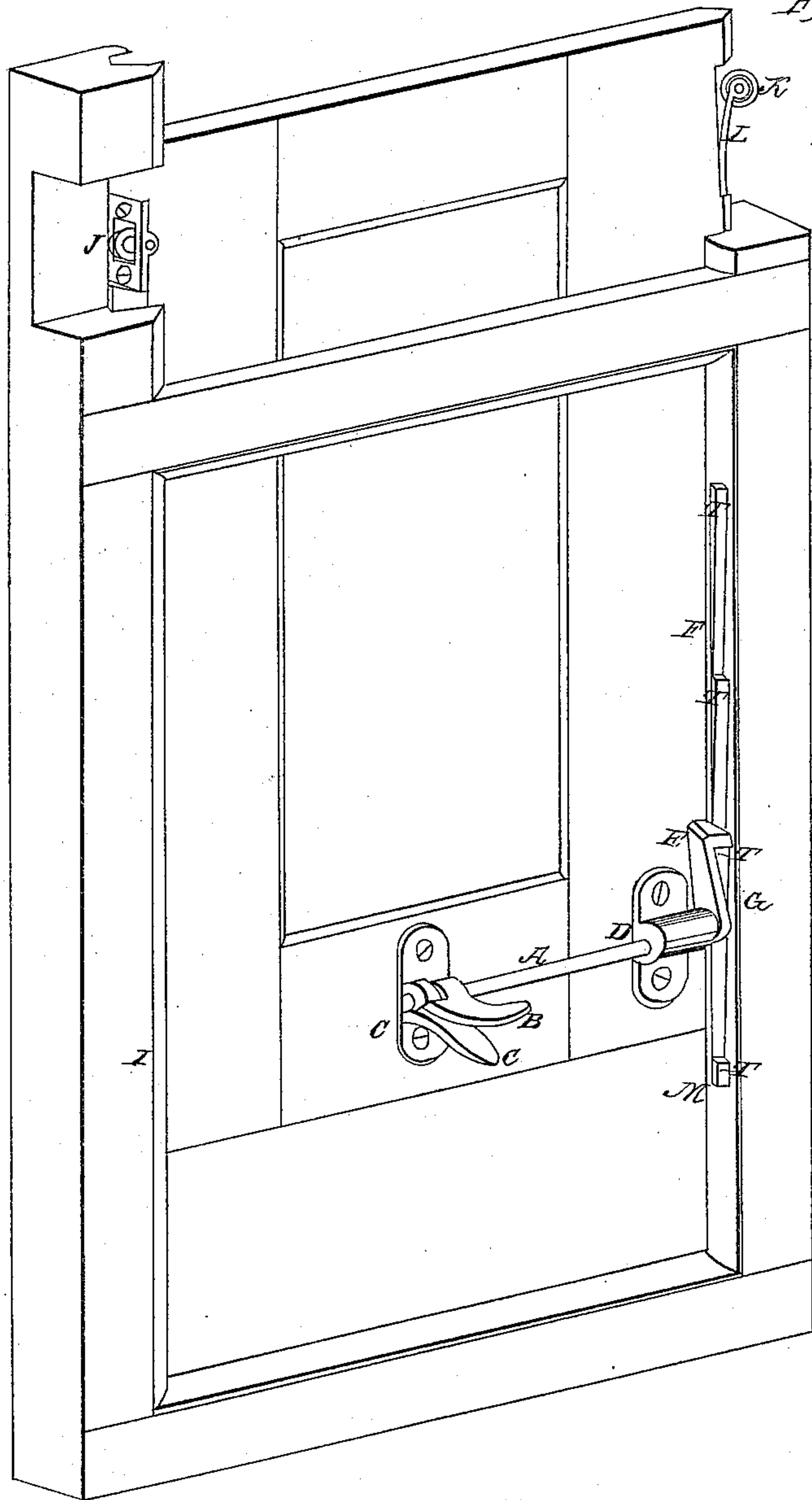


Fig 3

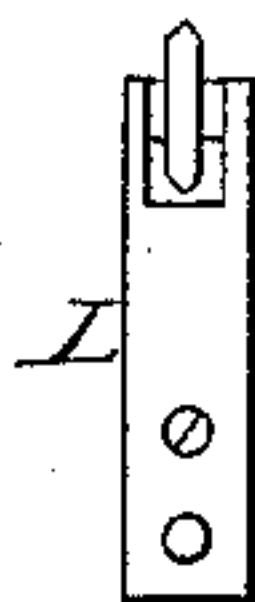
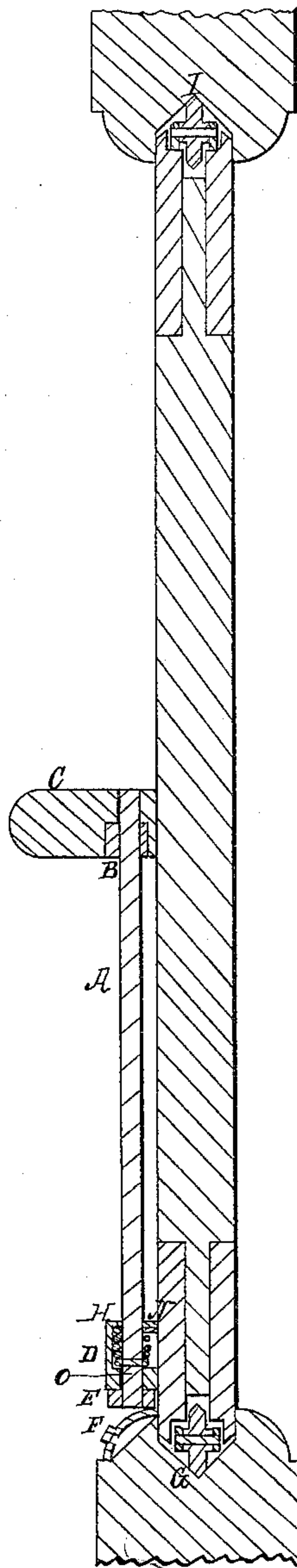


Fig 2



Witnesses:
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JOHN D. HALL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND OSBORN CONRAD, OF SAME PLACE.

IMPROVED RAILROAD-CAR-WINDOW FIXTURES.

Specification forming part of Letters Patent No. 44,770, dated October 13, 1864.

To all whom it may concern:

Be it known that I, JOHN D. HALL, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and improved fixtures for holding and facilitating the movement of railroad-car and other window sashes and blinds; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my invention as applied to a window. Fig. 2 is a horizontal section of the same, taken through the lower rail of the sash and the stiles of the window-frame. Fig. 3 is a face or outside view of a pulley or roller and its elastic support or attachment.

Corresponding parts in the different figures are indicated by the same letter.

This invention consists in connecting, by means of a metallic rod and thumb-piece, a suitable ratchet or catch, the object of which is to support the sash at any desired height, with a finger-piece or handle, similar to the ordinary one usually attached to the middle part of the lower rail, in such a manner that when the said thumb and finger pieces are grasped by the person desiring to move the sash in the ordinary or natural manner, the said ratchet instantly releases its hold upon the catch or window-frame, thus rendering the sash free to move either upward or downward.

It consists, further, in manufacturing the said catch out of sheet metal, the inclined planes thereof being raised up, and the whole being pressed into the proper shape by means of a suitable die and stamp.

It consists, further, in the formation of angular grooves in each of the jambs or guides of the window-frame, and of beveling the outer edges of the stiles of the sash to fit the said grooves and of so providing the said edges with pulleys or rollers and springs that the sash is thereby held firmly, and thus prevented from shaking or rattling, and is at the same time easily raised or lowered.

To enable others skilled in the art to make and apply my invention to use, I will proceed to describe its construction and operation with reference to the drawings.

I construct my window sashes and frames in any of the known forms, with the exception that I form in the jambs or stiles of the latter, throughout the whole distance through which the sash is intended to be moved, angular grooves, similar or equivalent to those shown in section at I and G, Fig. 2, the sash being so beveled as to fit said grooves loosely.

The finger-piece or handle C, intended to serve the double purpose of a support for one end of the rod A and of a handle by which to lift the sash, I construct of brass or any other suitable metal, and of any suitable and desirable form, and attach it to the middle part of the bottom rail of the sash by means of two suitable screws. The piece D, also screwed fast to the lower part of the sash, supports the other end of the rod A as a journal-box, and contains the spiral spring shown in section at H, Fig. 2, a suitable cavity for the reception of the said spring being formed in the said piece in the process of molding and casting.

The rod or rock-shaft A, I make of brass wire or any other suitable material, and fit it loosely into any suitable bearings or supports, C and D, and to the said rod, shaft, or other connection I rigidly attach any suitable piece, B, and any suitable ratchet, hook, or catch, E, in such relative positions and in such a manner that when a person grasps the piece, pieces, or projections B and C, as one desiring to raise or lower the sash would naturally do, the ratchet or catch E is withdrawn from contact with the ratch F, thus rendering the sash free to move either upward or downward, as may be desired. The pieces A, B, and E may be cast in one.

In making and attaching the spiral spring H, I insert one end of a piece of suitable spring-wire into a suitable hole, O, through the rod A, and then wind the same several times around the said rod, and, having cut the wire of the proper length, I attach or hook the other end to the piece D, the spring being coiled or wound in the proper direction and drawn to the proper tension to hold the hook or ratchet E (when applied to a window) in contact with the ratch F. I do not, however, confine myself to this particular mode of constructing the said spring or to this particular kind of a spring, but would adopt any method of construction which experience may suggest or any kind of a spring

which would answer the purpose described. Another method of applying a spring for this purpose would be to place it between the thumb and finger pieces B and C in such a manner that it would tend to spread the said pieces apart.

The ratch or notched piece F (shown in section in Fig. 2) I construct of sheet-brass or any other suitable sheet metal, the inclined planes T being formed and the whole piece being pressed into shape corresponding with the stop-bead or molding which holds the sash in its place by means of a suitable die and stamp. This ratch may also be cast of brass or any or suitable metal. It may also be formed of wood or it may consist of suitable holes or notches cut into the ordinary stop-bead or molding. It may contain any desirable number of notches T, and also a notch, M, under which the ratchet fits when the window is closed, thereby preventing the sash from being raised from the outside.

The operation of this part of my invention is as follows: When a person desires to raise or lower the sash he will naturally grasp the pieces or projections B and C, and in doing so he cannot fail to press the piece B downward, thus causing the spring H to yield and the ratchet E to release its hold on the ratch F, thereby leaving the sash free to move either upward or downward; and, on the contrary, the instant the person relinquishes his grasp or hold the elasticity of the spring causes the ratchet to renew its hold, thus sustaining the sash at or near the point at which it chanced to be at that instant.

The other part of my invention consists in fixing in or attaching to one edge of the sash, and near either end, the two pulleys or rollers, I and J, (the former seen only in section in Fig. 2,) and of attaching to the opposite side of the sash the two rollers, G and K, (the former seen only in section in Fig. 2,) by means of suitable springs, L, the object of the said rollers and springs being to reduce the friction, and thus render the sash easily raised or lowered, and at the same time hold the same firmly, thereby preventing it from shaking or rattling in consequence of sudden motions or movements of the cars. The periphery of the rollers represented in the drawings are beveled so as to fit the grooves in the frame, the object of

so beveling them and of constructing said beveled groove being to prevent the sash from pressing or striking against either the inside or outside stop, thereby causing friction or rattling. Similar rollers may, however, be applied to any window-sash constructed in the ordinary manner, with the simple variation of constructing them with their peripheries parallel to their axes.

In making use of this invention, should I dispense with the rollers and springs last described I would construct the right-hand groove in the sash-frame of the ordinary form and the left-hand one of the form represented in the drawings, and would bevel or incline the inclined planes of the ratch F, in the manner shown at F, Fig. 2, the ratchet E being correspondingly beveled. This being done, the elastic force of the spring H, together with the gravity of the sash, will press the latter snugly into the left-hand groove and against the inside right-hand stop, and thus prevent the same from shaking or rattling.

This invention is especially applicable to railroad and street car windows, but may also be applied with advantage and convenience to house or any other windows, in which case the rod A may be inserted in a suitable hole in the bottom rail of the sash and thus be entirely concealed from view; and in case the sashes were very heavy, I would use a long rod, running the entire length of the said rail, and having the thumb-piece B attached in the center, and a ratchet or catch on either end, and also a ratch on the stop or jamb of either side.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the rod A, the finger-piece C, the thumb-piece B, the box and support D, the spring H, the ratchet E, and the ratch or strip F, substantially in the manner and for the purposes set forth.

2. The angular-faced rollers G I J and the spring L, with roller, in combination with the angular groove, constructed and operating as and for the purpose described.

JOHN D. HALL.

Witnesses:

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CHAS. WELDING.