

1,056,973.

2 SHEETS—SHEET 1.

Fig. 4.

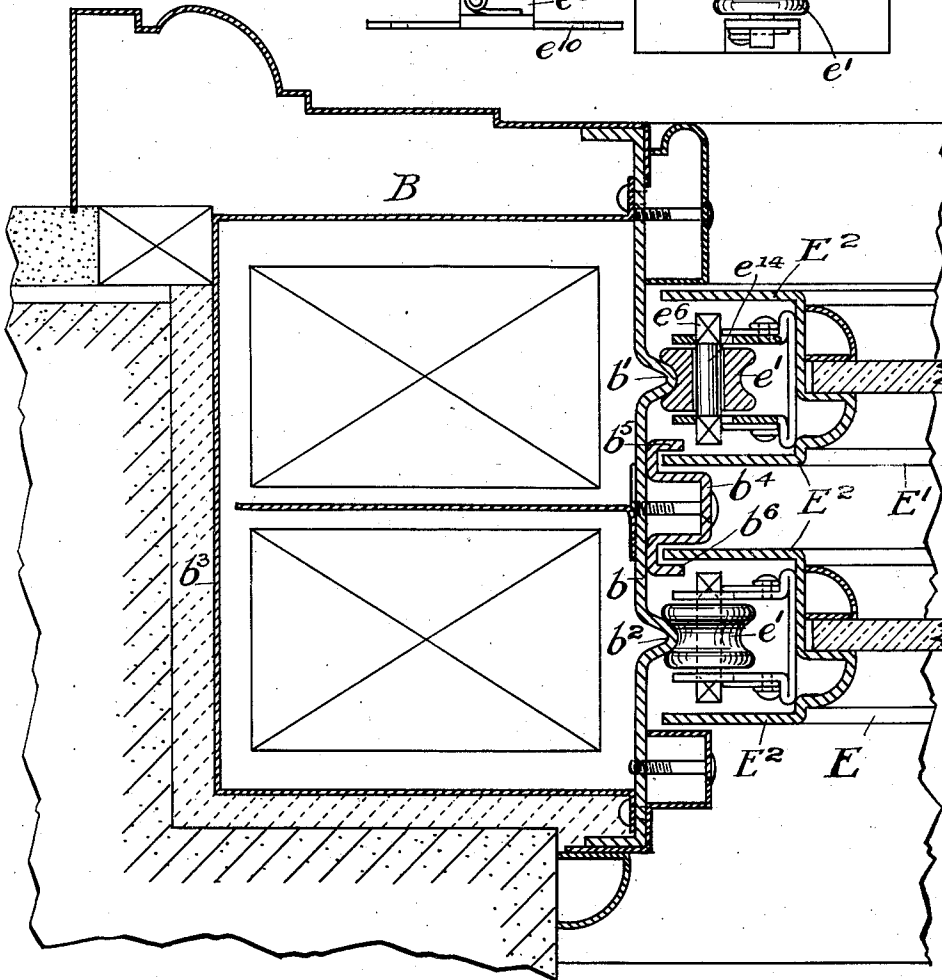
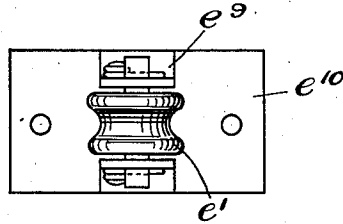


Fig 1.

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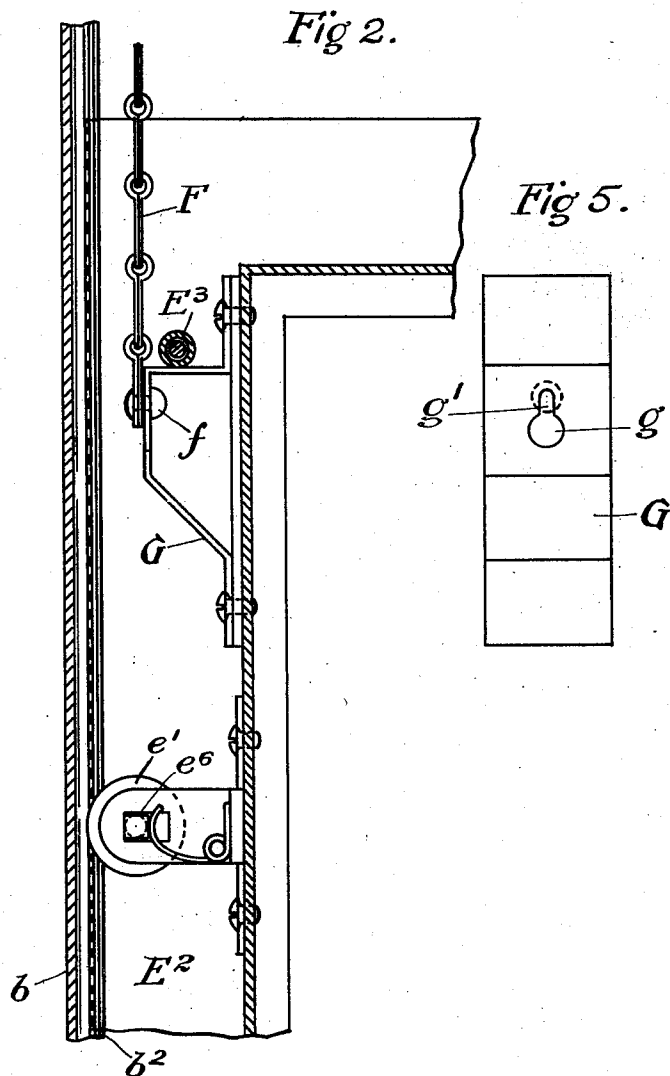
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METAL WINDOW FRAME AND SASH.
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Patented Mar. 25, 1913.

2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ANDREW J. CONNELL AND JOHN W. RAPP, OF NEW YORK, N. Y.; SAID CONNELL
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METAL WINDOW FRAME AND SASH.

1,056,973.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed December 31, 1909. Serial No. 535,761.

To all whom it may concern:

Be it known that we, ANDREW J. CONNELL, a citizen of the United States, and a resident of the borough of Bronx and State of New York, and JOHN W. RAPP, a citizen of the United States, and a resident of Flushing, in the borough of Queens and State of New York, have invented certain new and useful Improvements in Metal Window Frames and Sashes, of which the following is a specification.

This invention relates to a metal window frame and window sash, and means for hanging the same.

We will describe a preferred embodiment of our invention and then point out the novel features in claims.

In the accompanying drawings, in which similar reference characters designate corresponding parts throughout the several views, Figure 1 is a transverse sectional view through the side of a frame and the stiles of sashes embodying our invention; Fig. 2 is an enlarged vertical section of the upper left hand corner of one sash; Figs. 3 and 4 are details of the rollers and connections; and Fig. 5 is a detail of the means for securing the sash to the chain and weight.

Referring now to the accompanying drawings, B designates a side of a window frame of sheet metal construction. The casing is so formed as to provide tracks b' b^2 respectively located in position to co-act with rollers e' carried by the upright or stile members of the respective sashes E E'. As illustrated, the sides B of the frame are formed of a weight inclosure or pocket b^3 comprising a hollow rectangular casing, the inner side faces b of which are preferably formed of separate pieces of metal suitably secured to the balance of the weight inclosure. As shown, two outwardly projecting tracks b' b^2 are formed in each of such side faces, upon which tracks the grooved rollers e' are adapted to run when the sashes are moved. The inside and outside trim or moldings are preferably secured to these inner side faces, which are provided with laterally extending portions for this purpose. Also secured to such inner side faces b is a sash-dividing strip b^4 having upturned lugs b^5 b^6 on each side thereof forming longitudinally disposed slots within which the two interior sides E² of the sashes E project and move when the sashes are raised or

lowered, thus forming combined weather strips, guides and dividing strips.

The vertical members or stiles and the transverse or rail members of the sashes E E' are each preferably formed of one piece of metal bent as shown. The said stile members are preferably of the U-shape best shown in Fig. 2 and the rail members of the form best shown in Fig. 3.

The grooved rollers e' are secured within the U-shaped stile members of the sashes and run on the tracks b' b^2 . Four of such rollers are preferably provided for each sash, two on each side, located respectively above and below the transverse center line thereof, so as to prevent jamming and pinching. Each of the rollers e' , as shown, are loose upon a shaft or axle e^{14} having squared ends e^6 movable backward and forward in slots e^7 formed in bearing plates or standards e^8 integral with a base plate e^{10} secured to the sash. Such rollers are normally pressed forward into contact with the tracks b' b^2 by a spring e^9 .

The stile members of both sashes and the bottom rail of the lower sash are preferably reinforced, as shown, at suitable points by rivets and distance pieces as indicated by E³, Figs. 3 and 4, to add to the rigidity thereof.

The sashes may be secured to the weight chain in any suitable manner, such as by a hook and slot connection. We preferably secure the sashes to the weight-chain, however, by means of what might be called a button f having a laterally extending shank portion secured to the last link of the chain. The button f is passed through a hole g in a bracket plate G and then moved upwardly so that the shank portion of such button, which is simply a rivet or bar, fits into a contracted slot g' leading from the hole g upwardly, and the plate G is engaged and held between the last link of the chain and the enlarged head of the button f , thus forming a ready means of attachment and holding the sash firmly.

Having described our invention, we claim:

1. The combination with a pulley stile provided with tracks, of a sash, roller bearing plates secured to the sash and having horizontal slots, rollers mounted to have backward and forward movement in the slots.

2. The combination with a pulley stile

provided with outwardly projecting tracks, of a sash, roller-bearing plates secured to the sash and having horizontal slots, grooved rollers mounted to have backward and forward movement in the slots, and a spring for pressing the rollers into engagement with the tracks.

3. The combination with a pulley stile provided with tracks, of a sash, roller bearing plates secured thereto and projecting laterally therefrom, rollers mounted in said

plates to have inward and outward movement, and springs for normally pressing the rollers to their outward positions.

In witness whereof, we have signed our names to the foregoing specification in the presence of two subscribing witnesses.

ANDREW J. CONNELL.
JOHN W. RAPP.

Witnesses:

JOS. F. O'BRIEN,
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