H. E. CAMPBELL.

METAL WINDOW FRAME AND SASH.

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1,241,090.

Patented Sept. 25, 1917.

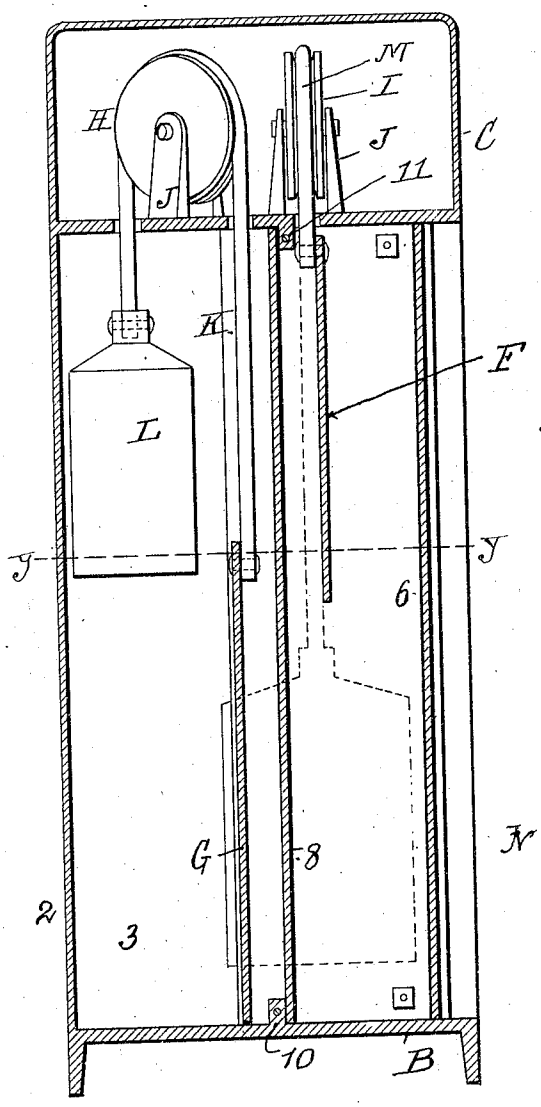


Fig. 1.

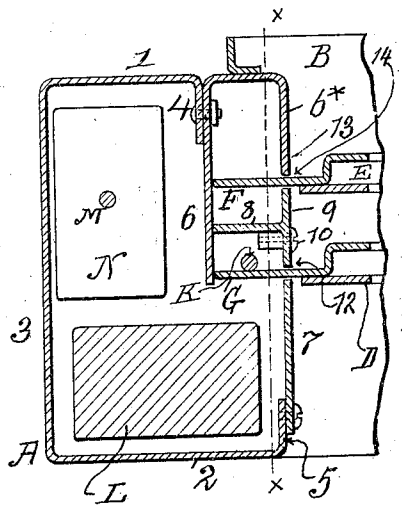


Fig. 2.

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UNITED STATES PATENT OFFICE.

HARRY E. CAMPBELL, OF NEW YORK, N. Y.

METAL WINDOW FRAME AND SASH.

1,241,090. Specification of Letters Patent. Patented Sept. 25, 1917.

Application filed March 8, 1917. Serial No. 153,256.

To all whom it may concern:

Be it known that I, HARRY E. CAMPBELL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Metal Window Frames and Sashes, of which the following is a specification.

The invention is a metal window-frame and sash, and consists in improvements upon the frame disclosed in U. S. Letters Patent No. 1,222,358, granted to me April 10, 1917, wherein I have set forth a metal window-frame comprising a lintel, a sill and two tubular side members forming jambs—the said side members each having a vertical opening extending through its inner wall—a sash slidable in said frame, and plates laterally projecting from said sash and entering said side members through said openings.

The present improvements comprise a new construction of the jambs, whereby I am enabled to reduce the amount of metal required, thus making said jambs lighter, to diminish the amount of window space occupied by said jambs, to cheapen the cost, and to simplify and prevent interference of moving parts—while at the same time retaining all the advantages of my aforesaid device in preventing entrance of drafts, moisture or flame to the room or building.

In the accompanying drawings—

Figure 1 is a vertical section on the line x, x of Fig. 2. Fig. 2 is a horizontal section on the line y, y of Fig. 1.

Similar letters and numbers of reference indicate like parts.

The window-frame, which is of metal, comprises two similar jambs, one of which is shown at A, a sill B and a lintel C.

The jamb A is constructed of plate metal and, as here shown, substantially quadrangular in cross section, there being a front wall 1, a rear wall 2, an outer side wall 3, and an inner side wall formed in three sections 7, 9, 6*. The walls 2, 3 and a portion of wall 1 are preferably in a single piece, the edges of wall 1 and wall 2 being flanged at 4 and 5. Within the jamb and extending partly across the same is a plate or partition 6 which is bolted to flange 4, and then bent at right angles to form part of wall 1, and again at right angles at 6* to form one section of the inner side wall. The remaining sections of said inner side wall are the plate 7 and the cross portion 9 of a T-shaped plate 8, said cross portion being secured by screws to lugs 10, 11 respectively on the sill B and lintel C. There is a slot or opening 12 between the vertical edges of plate 7 and cross portion 9, and a similar slot or opening 13 between the vertical edges of plate 6* and cross portion 9. The inner edge of T-shaped plate 8 is in contact with plate 6, so that said plate forms a partition located between the openings 12, 13.

D is a vertically slidable lower sash, and E a similar upper sash. On said sashes are laterally extending side plates F and G. The plate F on sash E extends through slot 14 and is in sliding contact with plate 6. The plate G on sash D extends through slot 12 and is also in sliding contact with the plate 6.

Within the lintel C are suspension pulleys H, I journaled in suitable brackets J. The suspension cord or flexible strip K of sash D passes over pulley H and carries the counter-weight L. The suspension cord or flexible strip M of sash E passes over pulley I and carries the counter-weight N. The cross sectional shape of the counter-weights is elongated, and is here shown as a parallelogram, and said weights are placed so that said parallelograms stand with their major axes relatively at right angles. Therefore the counter-weight L, of which the said major axis is parallel to jamb wall 2, is placed in the wider portion of the jamb included between the free edge of plate 6 and wall 2, and the counter-weight N, of which the said major axis is parallel to jamb wall 3, is placed in the narrower portion of the jamb included between side wall 3 and plate 6. The suspension pulleys H, I are set at an angle to one another in order to suit this disposition of the counter-weights.

By reason of this construction I obtain the following advantages:

I decrease the thickness of the jamb, (distance between parallel walls 1, 2), thus causing the whole frame to be lighter and to occupy less space in the window opening. I also reduce the amount of metal used, thus cheapening the construction.

The jamb has practically two compartments, the larger of which receives the counter-weights L, N, and the smaller, the lateral

sash plates F, G, so that there is no possibility of the weights and sash plates interfering with one another.

Instead of carrying the lateral sash plates F, G through openings or slots in the inner wall of the jambs and across said jambs to make contact with the side walls, as in the structure of my aforesaid application, I make said sash plates of much less width, carry them, as before, through slots in the inner jamb walls, but terminate them at the plate 6. A large saving of metal is again effected, while the joints between sash plates and jamb remains quite as effective in their capacity to prevent passage of drafts, moisture or flame.

I claim:

1. A metal window-frame, comprising a hollow jamb having a vertical opening in its inner side wall, a partition in said jamb parallel to said side wall and extending across said opening and partly across said jamb, a sliding sash in said frame, and a plate laterally projecting from said sash, passing through said opening and having its edge in sliding contact with said partition.

2. A metal window-frame, comprising a hollow jamb having a vertical opening in its inner side wall, a partition in said jamb parallel to said side wall and extending across said opening and partly across said jamb, a sliding sash in said frame, a plate laterally projecting from said sash, passing through said opening and having its edge in sliding contact with said partition, suspension means for said sash, and a counter-weight carried by said suspension means and disposed within said jamb and between the outer side wall of said jamb and said partition.

3. A metal window-frame, comprising a hollow jamb having a vertical opening in its inner side wall, a partition in said jamb parallel to said side wall and extending across said opening and partly across said jamb, a sliding sash in said frame, a plate laterally projecting from said sash, passing through said opening and having its edge in sliding contact with said partition, suspension means for said sash, and a counter-weight carried by said suspension means and disposed within said jamb and in the space between the free edge of said partition and a jamb wall.

4. A metal window-frame, comprising a hollow jamb having parallel vertical openings in its inner side wall, a vertical partition in said jamb extending across said openings and partly across said jamb, two sliding sashes in said frame, and plates laterally projecting from said sashes, passing through said openings and having their edges in sliding contact with said partition.

5. A metal window-frame, comprising a hollow jamb having parallel vertical openings in its inner side wall, a vertical partition in said jamb extending across said openings and partly across said jamb, a partition disposed between said openings in said inner side wall and extending from said side wall to said first-named partition, two sliding sashes in said frame, and plates laterally projecting from said sashes, passing through said openings and having their edges in sliding contact with said first-named partition.

6. A metal window-frame, comprising a hollow jamb having parallel vertical openings in its inner side wall, a vertical partition in said jamb extending across said openings and partly across said jamb, two sliding sashes in said frame, plates laterally projecting from said sashes, passing through said openings and having their edges in sliding contact with said partition, suspension means for said sashes, and counter-weights carried by said suspension means; one of said counter-weights being disposed within said jamb and between the outer side wall of said jamb and said partition, and the other of said counter-weights being disposed within said jamb and in the space between the free edge of said partition and a jamb wall.

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

HARRY E. CAMPBELL.

Witnesses:

GERTRUDE T. PORTER,

MAY T. MCGARRY.