H. E. CAMPBELL.

METAL WINDOW FRAME AND SASH.

APPLICATION FILED JULY 1, 1916.

1,211,914. Patented Jan. 9, 1917.

Fig. 2.

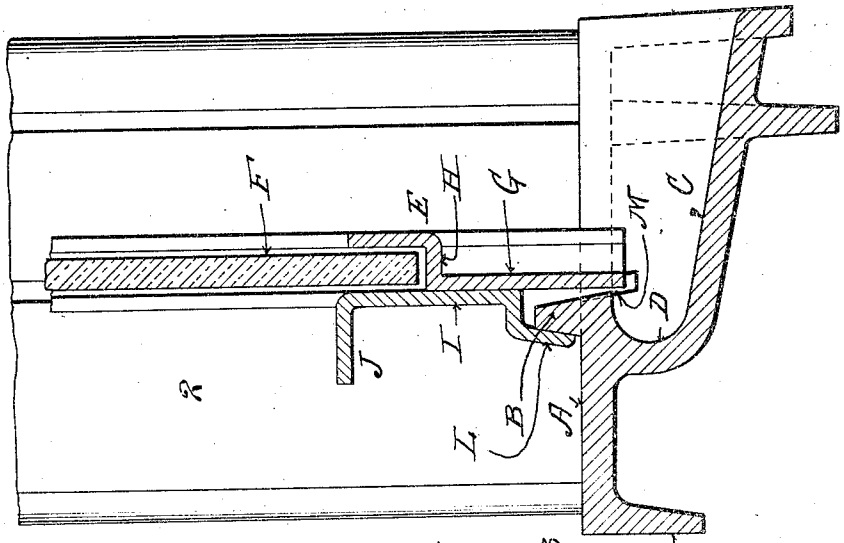
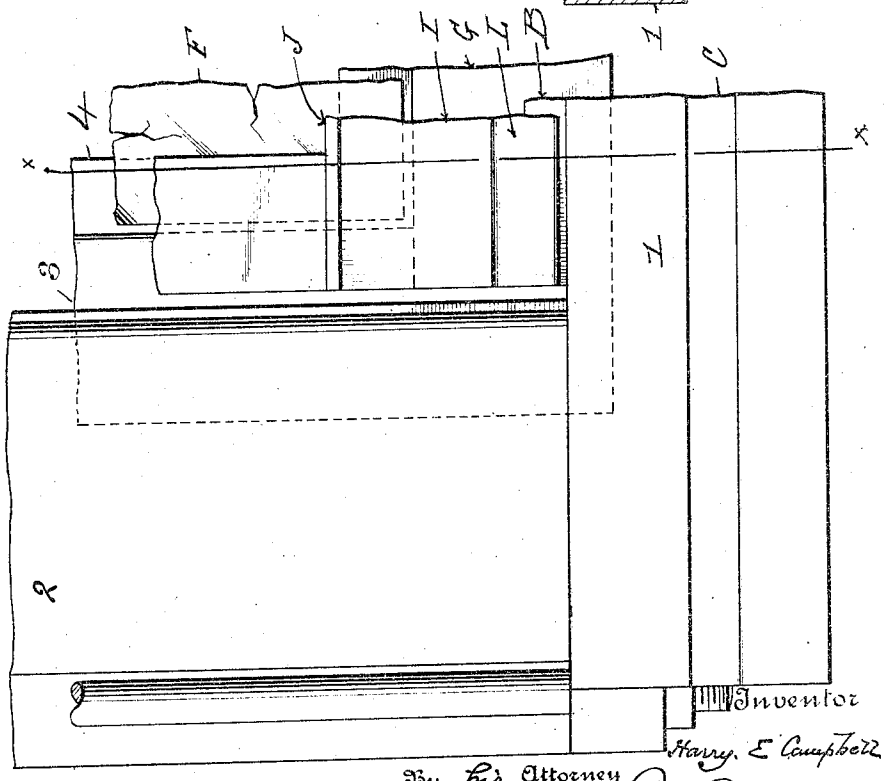


Fig. 1.



Inventor

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By his Attorney

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UNITED STATES PATENT OFFICE.

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METAL WINDOW FRAME AND SASH.

1,211,914. Specification of Letters Patent. Patented Jan. 9, 1917.

Application filed July 1, 1916. Serial No. 106,996.

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 relates to window-frames and sashes of metal, and consists in the construction of the lower rail of the sash and of the sill, whereby by reason of the closing of the sash, two weather-tight joints are formed between sash and sill. The construction is such that the parts in coöperating to form one of the joints also cause the sash to be drawn inward into close contact with said sill, thereby producing the other joint.

In the accompanying drawings—Figure 1 is a front elevation of the lower corner of a metal window-frame and sash embodying my invention. Fig. 2 is a section on the line *x*, *x* of Fig. 1.

Similar numbers and letters of reference indicate like parts.

1 is the sill.

2 is a hollow jamb having in its inner wall a vertical opening to receive a guide-plate 3, which projects laterally from one vertical member 4 of the sash frame. A similar jamb, having a vertical opening, receives a similar plate on the other vertical member (not shown) of said sash frame.

The bottom sash rail and the sill, to which my present invention is applied, are constructed as follows: The inner portion of the sill is preferably horizontal, as shown at A, and on its outer edge has a vertical substantially wedge-shaped flange B. The outer portion C of the sill is downwardly and outwardly inclined and lies below the level of part A. Between the portions C and A is an inwardly curved portion D. The bottom sash rail comprises an outer bar E of sheet metal, which extends over the lower portion of the pane F. The lower part G of said bar extends downwardly for such a distance as that when the sash is in closed position, as shown in Fig. 2, said lower part lies in front of the sill flange B. The bar E is bent twice, and its horizontal portion H extends below the pane G. Said sash rail also comprises an inner bar I of sheet metal, which is united to the depending part G of the outer bar by any suitable means, such as electric welding. Said bar has at its upper edge an inwardly turned flange J, and at its lower edge a flange which is first bent at right angles inwardly, and then downwardly and inwardly, as shown at L. The inclination of the flange at L corresponds to the inclination of the inner side of the sill flange B. The upper part of bar I bears against the lower portion of the pane. The flange J provides a ledge, to which the hands of the operator may be applied in raising or lowering the sash.

When the sash is in lowered position, the inclined flange L meets and runs over the inner inclined surface of the sill flange B until the lower edge of said flange L is seated upon the sill. By reason of the coaction of these parts, as the sash moves downwardly, the inner face of the downward extension G of bar E is drawn into close contact with the sill at the base of the flange B. In this way, two tight joints are formed between the sill and the bottom sash rail—namely, that between the inclined flange L and flange B, and between the depending portion G of bar E and the base of flange B. The last-named joint becomes tightly closed because the portion G is drawn against said flange base—the contact, in the form of my device here illustrated, being between the inner face of portion G and the angle at M between the outer inclined side of flange L and the curved portion D of the sill. The resiliency of the metal sash frame is sufficient to permit of the slight lateral movement of the lower sash rail that is required. By this means I produce at the bottom rail of the sash two water and dust-proof joints.

I claim:

1. A sash of sheet metal, having a bottom rail comprising an outer bar and an inner bar united together and receiving the lower edge of the pane between them, the said outer bar being bent to form a shoulder closing the space between said bars, and a sill comprising an inner horizontal portion, a vertical wedge-shaped flange, and an outer inclined portion; the said inner bar having a downwardly and inwardly inclined flange extending over and coöperating with said sill flange, and the said outer bar, when said sash is in closed position, extending below and forming a joint with the angle of said sill at the base of the wedge-shaped flange thereon.

2. A sash of metal having two longitudinal plates secured on the under side of its lower rail, the outer plate extending below the inner plate, a sill, and a vertical flange on said sill entering between said plates and having its inner side downwardly and inwardly inclined; the said inner plate, upon the closing of said sash, coöperating with the inclined inner side of said flange to move said outer plate laterally inward into contact with said sill below said flange and the said outer plate extending below the bottom of said sill flange, when the sash is closed.

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

HARRY E. CAMPBELL.

Witnesses:
GERTRUDE T. PORTER,
MAY T. MCGARRY.