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C. S. OWENS

HINGE

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Fig 2

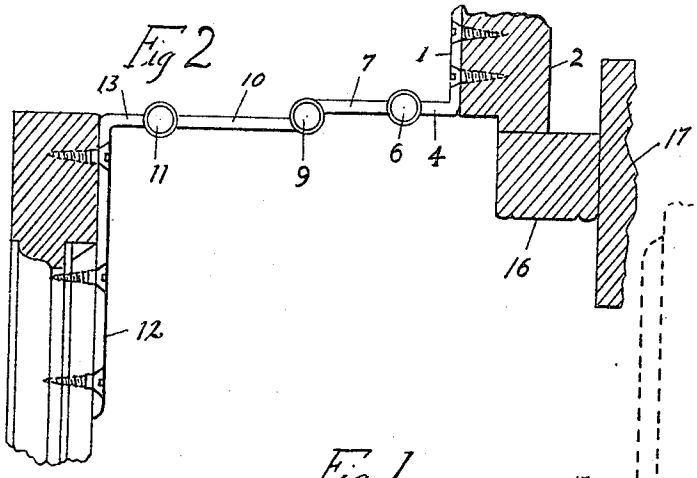


Fig 1

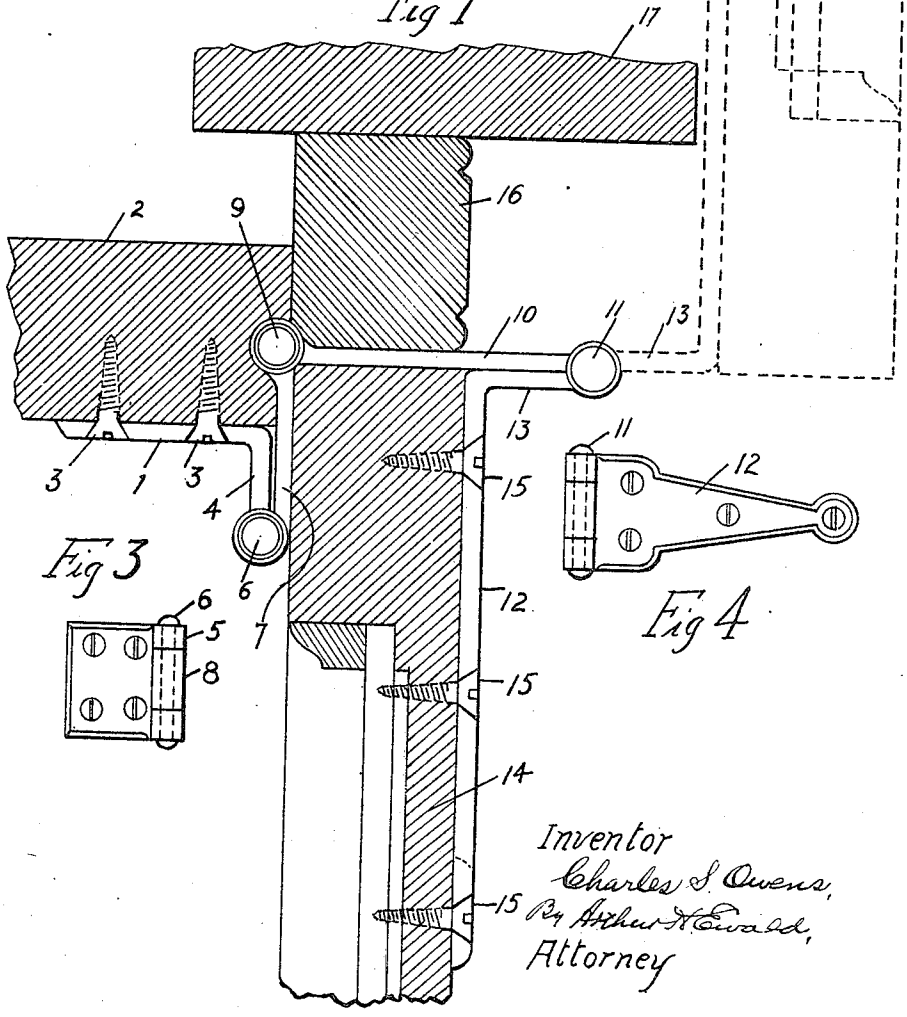


Fig 3

Fig 4

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UNITED STATES PATENT OFFICE.

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HINGE.

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The present invention relates to hinges, and particularly to hinges suitable for use with casement windows.

The principal object of the present invention is to provide a casement window hinge which will permit the opening of the window sashes flat against the building wall. As at present constructed, hinges designed for casement type windows permit the opening of the sashes only partially, and when opened to their full width the sashes do not rest flush against the building wall, but extend outwardly at an angle with respect thereto, thus interfering with the complete opening of the window as well as presenting more or less unsightly appearance when the window is opened. The present invention is designed, therefore, to obviate said difficulty.

A further object of the invention is to provide a casement window hinge which besides permitting the complete opening of the window sashes, also permits the opening of the sashes in such a manner that both sides of the window panes may be freely accessible for cleaning from the inside of the room.

A further object of the invention is to provide a casement window hinge which is adapted to be secured to the side of the sash frame, thus permitting the use of any suitable number of hinges on the sashes so as to suitably support the same. As at present constructed, the hinges of this type are arranged to be secured to the bottoms and tops of the frames only, and therefore only two hinges may be used in supporting each sash regardless of its size or weight, and therefore where the sashes are larger and particularly heavy, it is necessary to use unduly large and heavy hinges. This difficulty is overcome by means of the present invention.

Further objects of the invention will appear from the following detailed description thereof.

In the drawings:

Figure 1 is a sectional view of a portion of a window sash and frame illustrating the construction and use of my new casement hinge.

Figure 2 is a similar view showing the hinge extended so as to place the sash in position for cleaning.

Figures 3 and 4 are elevations of the hinge plates.

The numeral 1 indicates the inside leaf of a hinge constructed in accordance with this invention, said leaf being adapted to be secured to the window frame 2 by means of screws or other suitable fasteners 3. The leaf 1 is provided with a right angled extension 4 having knuckles 5 for a pin 6, by means of which an intermediate leaf 7 is pivotally secured thereto, the leaf 7 being provided with a knuckle 8 for the purpose. The other edge of the intermediate leaf 7 is provided with a knuckle for a pin 9, by means of which a second intermediate leaf 10 is pivotally secured thereto. In securing the hinge to the sash and frame, the frame 2 is notched out for the knuckles and pin 9 as shown in Figure 1. The opposite edge of the second intermediate leaf 10 is provided with knuckles for a pin 11 by means of which the outer leaf 12 of the hinge is secured thereto, said leaf 12 being provided with a right angled extension 13 which is adapted to lie parallel with the intermediate leaf 10 when the hinge is in closed position. The leaf 12 is secured to the window sash rail 14 by means of screws or other fastening means 15. When the sash is mounted in the window opening and the sash closed, the several hinge leaves are in relation disclosed; that is, the extension 4 of leaf 1 and intermediate leaf 7 are parallel with the sash rail; the second intermediate leaf 10 is at right angles to the rails, and parallel with the outside casing 16 of the window opening, against which it lies flush, as shown. The leaf 12 is secured to the sash rail so that the sash frame abuts against the leaf 10 when the sash is closed.

The operation of hinges constructed in accordance with this invention is as follows and as illustrated in broken lines in Figure

1 of the drawings and in full lines in Figure 2 of the drawings. When it is desired to open the sash, the ordinary procedure is followed, the hinge swinging on the pin 11 so that the sash may be swung back against the outside of the outer wall 17 of the building against which it lies parallel, the extension beyond the outside casing 16 provided by intermediate leaf 10 and the extension 13 of leaf 12 permitting such relation of the sash with respect to the outer wall.

When it is desired to open the sash for cleaning, the hinge is extended, as shown in Figure 2, the several leaves of the hinge swinging on the pins 6, 9 and 11 so that the intermediate leaves 7 and 10 are in alignment with the angular extensions 4 and 13 on the inside and outside leaves of the hinge respectively. The sash is thus extended at right angles with respect to the window opening, and at a suitable distance from the window frame to permit reaching between the frame and the sash so as to clean the outside of the window panes.

As will be seen, the outside leaf 12 of the hinge is adapted to be secured to the face of the sash rail or stile, and it is thus possible to use any number of hinges so as properly to support the sash in the frame and by reason of this method of attaching the hinge leaves to the face of the sashes, it it also possible to obtain ornamental effects by the use of particularly designed hinges, which is not the case where the hinges must be secured to the bottom and top ends of the sashes where they are concealed.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. A hinge, comprising in combination with an inside leaf adapted to be secured to a fixed frame and an outside leaf adapted to be secured to the face of a movable frame, an extension on said outside leaf extending at right angles thereto away from said frame, and a plurality of intermediate leaves pivotally secured together, one of said intermediate leaves being pivotally secured to said inside leaf and another being pivotally secured to the outer end of the extension on said outer leaf.

2. A hinge, comprising in combination with an outside leaf adapted to be secured to a fixed frame and an outside leaf adapted to be secured to the face of a movable frame, angular extensions on both of said leaves extending outwardly at right angles thereto away from the respective frames, and a plurality of intermediate leaves pivotally secured together, one of said intermediate leaves being secured to the outer end of the extension on said inner leaf and another of said intermediate leaves being pivotally secured to the outer end of the extension on said outer leaf.

CHARLES S. OWENS.