

May 13, 1930.

J. BROGDEN

1,758,905

HINGE

Filed Dec. 28, 1926

FIG. I.

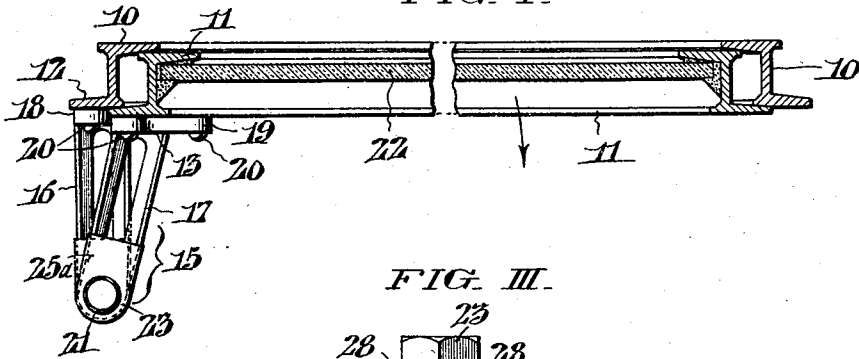


FIG. III.

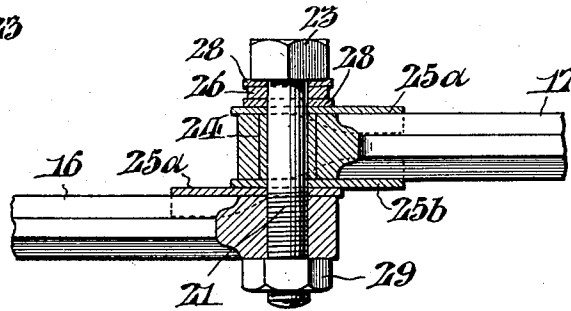


FIG. IV.

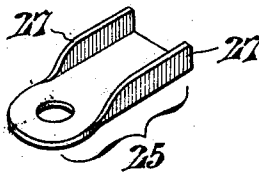
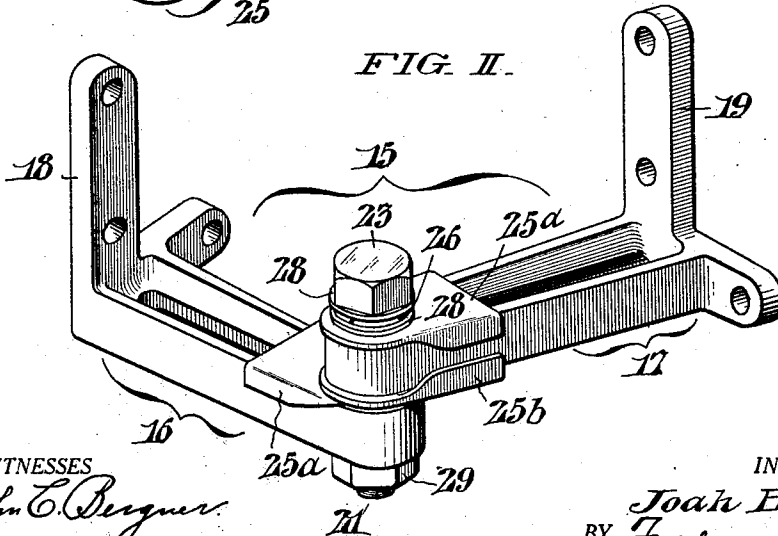


FIG. V.



FIG. II.



WITNESSES

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# UNITED STATES PATENT OFFICE

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## HINGE

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This invention relates to hinges, and more particularly, to hinges useful for casement windows and the like. As ordinarily constructed, such hinges comprise two bracket arm components which are inter-pivoted beyond the plane of the casement window so that as the latter is opened, the near edge of its sash swings away from the corresponding jamb rail, thereby rendering opposite sides of the glass readily accessible for convenience in cleaning.

My invention is directed toward rendering hinges of the type referred to capable, through adjustable frictional resistance, of maintaining the casement sashes in any desired position of opening against the possibility of being moved to and fro or slammed under the action of the wind pressure.

The foregoing desideratum I seek to secure by means, in the nature of an attachment which is conducive to very economical manufacture and easy application to standard types of casement hinges, without requiring any changes whatever in their construction or special tools for the purpose.

With reference to the drawings, Fig. I shows a horizontal section through a typical casement window equipped with hinges conveniently embodying my invention.

Fig. II is a perspective view of one of the hinges on a larger scale.

Fig. III shows a fragmentary sectional view through the hinge pivot with the component hinge arms opened out into aligned relation; and,

Figs. IV and V are detail perspective views of certain parts of my novel friction creating attachment.

The casement window structure chosen for convenience of illustration in the present connection, comprises a metallic jamb frame 10 whereof the perimetric rails are formed, as shown in Fig. I, from rolled bar stock of Z-shaped cross section. The sash frame 11 is constructed from identical bar stock, and closes against the jamb frame 10, in the manner illustrated, with its face flange 13 overlapping the corresponding face flange 12 of the latter frame.

The sash hinge comprehensively designat-

ed 15, embodies components 16, 17 which are in the form of longitudinally-slotted bracket arms with integrally formed anchorage pads 18, 19, adapted to be secured respectively to the flanges 12, 13 of the frames 10, 11, by appropriate fastening means such as screws 20. The outer ends of the bracket arms 16, 17 are joined by a pivot pintle 21 so that as the sash is swung outward, in the direction of the arrow in Fig. I, the near edge moves away from the corresponding jamb rail of the frame 10 thereby rendering opposite sides of the glass pane 22 readily accessible for purposes of cleaning. From Fig. III it will be observed that the pintle 21 is in the form of a screw bolt with a polygonal head 23, the major portion of the pintle shank passing free through a bushed aperture 24 in a hinge component 17, and the lower threaded end taking into the component 16.

In converting such a hinge to the purposes of my invention, I employ a novel friction-creating attachment means which includes a number of friction members such as shown at 25 in Fig. IV, and an ordinary split spring washer of the character exemplified at 26 in Fig. V. The friction members 25 may be conveniently struck from sheet material with rounded ends apertured for passage of the hinge pintle 21, and laterally turned parallel side edge flanges 27 for capacity to fit over the hinge components 16, 17 with restraint against independent movement relative thereto. These members 25 I preferably form from unlike metals—for example, brass and steel—capable, when maintained in pressure contact, of restraining free sliding movement one over the other without undergoing appreciable wear under long periods of usage. In equipping the hinge, two of the friction members 25, one 25<sup>a</sup> of brass and the other 25<sup>b</sup> of steel, are interposed between the hinge components 16, 17 after the manner shown in Fig. III. The spring washer 26 is preferably of steel and placed, with plain facing washers 28—also of steel—above and below it, beneath the head 23 of the hinge pintle 21, while another friction member 25<sup>a</sup>, of brass, is positioned between the washer assemblage and the contiguous face of the hinge com-

ponent 17. Obviously, by tightening-up of the screw pintle 21 to different extents, the contact pressure between the friction members 25<sup>a</sup>, 25<sup>b</sup> intervening the hinge components 5 16, 17 may be varied—with incidental cooperation of the spring washer 26—to increase or decrease resistance to free hinge movement as required, and thereby hold the casement sash 11 in any desired position of opening 10 against the possibility of displacement from such position under wind pressure. A clamp or jamb nut 29 engaging the protruding lower end of the pintle 21 serves to lock said pintle in adjusted positions. In this connection it is 15 to be particularly noted that by virtue of the unlike materials from which they are made, the lower facing washer 28 and the member 25<sup>a</sup> with which it contacts also cooperate after the manner of friction units 20 and therefore contribute to the restraining effect against free movement of the casement sash 11.

From the foregoing it will be apparent that my novel attachment is extremely 25 simple, easily applied to the hinges, and adjustable with the aid of an ordinary screw driver and a wrench or pair of pliers.

Having thus described my invention, I claim:

30 1. In a hinge of the character described comprising two complementary hinge components, the combination of interposed friction members of unlike material with apertured ends for passage of the hinge pintle 35 respectively associated with said components and individually restrained from movement relative to them by integral parallel side flanges, and a pivot screw pintle passing free through one of the components and taking 40 into the other with capacity for adjustment to vary the contact pressure between said friction members and thereby increase or decrease resistance to hinge movement.

45 2. In a hinge of the character described comprising two complementary hinge components, the combination of a pivot screw pintle passing free through one of the components and threadedly-engaging into the 50 other, opposing friction members of unlike materials with apertured portions for passage of the pivot pintle interposed between the hinge components at the pivot region, said friction members also embodying channel-section portions engaging over the hinge 55 components, and a split spring washer beneath the head of the screw pintle cooperating incidental to adjustment of the latter to vary the contact pressure between the friction members aforesaid in increasing or decreasing the resistance to hinge movement. 60

65 3. A friction creating attachment for hinges comprising opposing friction members adapted to be interposed between the inter-pivoted complementary components of the hinge; said friction members being

fashioned from unlike sheet metal with eye- portions for passage of the hinge pintle and integral channel-section extensions to engage over and move respectively with the hinge components and to cooperate in resisting hinge movement to various degrees determinable by adjustment of a pivot pintle screw passing free through one of the hinge components and threadedly-engaging into the other, and a split spring washer for inter- position beneath the head of the screw pintle to assist in maintaining the friction in accordance with adjustments made as aforesaid.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 22nd day of December, 1926.

JOAH BROGDEN.