This invention relates to friction hinges for holding hinged doors or windows in any position in which they may be set. If a door or casement window provided with an ordinary hinge is allowed to stand open it is easily moved from this position and such doors or windows frequently blow shut which not only prevents the door or window from being kept open when desired but causes objectionable noise due to the slaming shut of the door or window.

The main object of the present invention is to provide a device or attachment which may be readily applied to an ordinary hinge of a door or casement window or other hinged object, and by means of which sufficient friction may be exerted upon such hinge to cause the same to remain in any position in which it is set, against the action of the ordinary forces tending to move such object from such position. A further object of the invention is to provide a friction hinge which may be quickly and easily loosened or released to permit turning movement of the hinge when desired. A further object of the invention is to provide a hinge which may be held in any desired position by friction alone, so that in the case of the application of an unusual force such as a sudden effort to move the door or window the hinge may be moved against this friction without breaking any of the parts of the device.

Our invention consists essentially in a friction attachment for hinges, comprising a member embracing the ends of the hinge joint, and means for engaging said embracing member and the parts of the hinge in such manner as to exert a frictional force on the parts of the hinge to hold the same in position. The invention should also be understood, however, as including the entire assembly, including the hinge with a friction device of our invention applied thereto.

The accompanying drawings illustrate embodiments of our invention and referring thereto:

Fig. 1 is a plan view of a casement window hinge provided with a friction device according to our invention, the adjacent portions of the window and the casing being shown in section.

Fig. 2 is a horizontal section of the same on line 2-2 in Fig. 3 with the window in open position.

Fig. 3 is a side elevation of the hinge.
any force which will ordinarily be applied thereto for example by a wind blowing through the window. At the same time however if any one unaware of the fact that the hinge is secured in this position attempts to shut the window and exerts an unusual force thereon the hinge may be moved against this friction without damaging any parts of this device. When it is desired to close the window or door, or to move the same to a different position, wing bolt 12 may ordinarily be loosened sufficiently to relieve the friction and permit easy turning of the hinge.

Other means may be employed for causing the lateral displacement of the pins 9 and 10 required to produce the friction against the knuckles or barrels of the hinge. For example, as shown in Figs. 5 and 6, a cam member 16 having a bevelled or sharpened edge 17 may be pivotally mounted at 18 on the bracket 7 and may be provided with a projecting handle 19 for operation thereof. When handle 19 is pressed down against the bracket so as to rotate cam member 16 in the direction indicated by the arrow, the bevelled edge thereof is pressed more firmly against knuckle or barrel portion 5 so as to exert the required lateral thrust against such portion. The provision of a bevelled or sharpened edge on the cam member is for the purpose of causing the same to cut into the barrel portion sufficiently to set itself therein in such manner that it will remain in any position in which it is set, until relieved by means of handle 19.

In Fig. 7 is shown the application of our invention to a door hinge in which one of the leaves or butts 3 of the hinge is provided with two knuckle portions 5 and the other leaf or butt 4 is provided with three knuckle portions 6. The bracket member 7 as before embraces the ends of the joint of the hinge and is provided with threaded pin 10 screwing into the barrel portions 8 of said bracket member and projecting somewhat for example approximately half way through it to their knuckle portions 6. A loose pin 9 extends in this case through the central knuckle portion 6 and the two knuckles 5 and part way through the two end knuckles 6 as shown. The wing bolt 12, which is mounted as before, is placed in position to engage either of the intermediate knuckle portions 5. If desired similar means may be provided for pressing against both of said knuckle portions. The other features of the construction and the operation of the device are substantially the same in this case as in the form first described. The points at which friction is exerted upon tightening of the wing bolt 12 are again indicated at a.

We claim:

1. A friction hinge device comprising, in combination with a hinge having a pair of leaves provided with alternating knuckle portions whose openings are in alignment with one another, a member embracing the ends of the joint of said hinge and having end portions provided with openings in alignment with the openings in said knuckle portions, end pins engaging in said openings in said end portions and projecting into the end knuckle portions, a loose pin extending within the openings of said knuckle portions between said first-named pins and means mounted on said embracing member and adapted to engage an intermediate knuckle of the hinge to exert a relative lateral thrust between said knuckle and said embracing member.

2. A construction as set forth in claim 1 in which said thrust exerting means comprises a wing bolt screwing through said embracing member and bearing at its inner end against said intermediate knuckle of the hinge.

3. A friction hinge device comprising, in combination with a hinge having a pair of leaves one of which is provided with a knuckle portion at each end of the hinge and the other of which is provided with a knuckle portion intermediate said end knuckle portions, a member embracing the ends of said hinge joint, means on said embracing member and engaging said end knuckles in such manner as to exert lateral pressure against the same, a pin extending through said intermediate knuckle and also engaging said knuckles in such manner as to exert a lateral pressure against the same, and means mounted on said embracing member and engaging said intermediate knuckle in such manner as to exert a relative lateral thrust between said embracing member and said intermediate knuckle.

4. A friction device, for attachment to a hinge having a pair of leaves one of which is provided with two end knuckle portions and the other of which is provided with an intermediate knuckle portion, comprising a member adapted to extend alongside the joint of such hinge and having end portions embracing the said end knuckles, means on said end portions for engaging said end knuckles in such manner as to exert lateral pressure against the same, a pin adapted to extend through said intermediate knuckle and to also engage said end knuckles in such manner as to exert a lateral pressure against the same, and means mounted on said embracing member and adapted to engage said intermediate knuckle in such manner as to exert a relative lateral thrust between said embracing member and said intermediate knuckle.

In testimony whereof we have hereunto subscribed our names this 9th day of June, 1926.

THEODORE J. RYAN.
COMMODORE D. RYAN.