Aug. 15, 1933. L. E. HEASLEY 1,922,365

FRICTION HINGE

Filed April 13, 1931

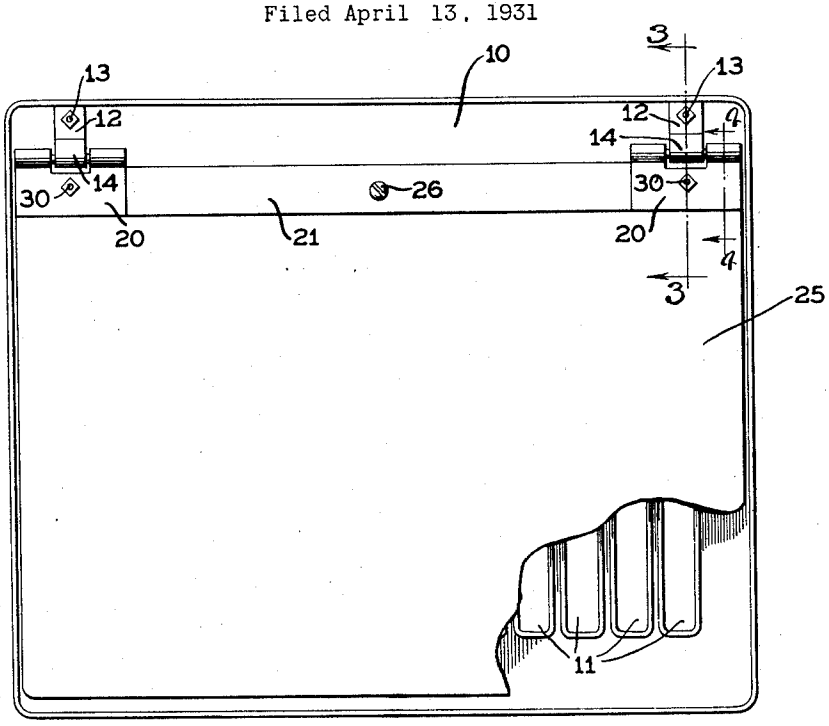


Fig. 1.

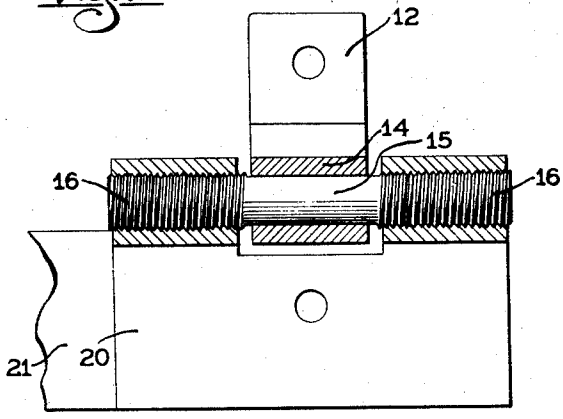


Fig. 2.

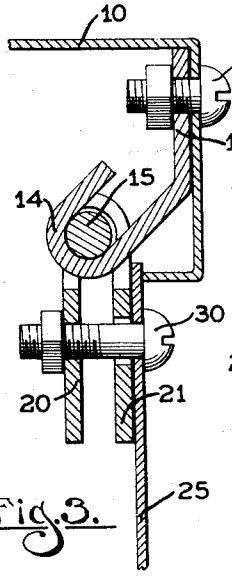


Fig. 3.

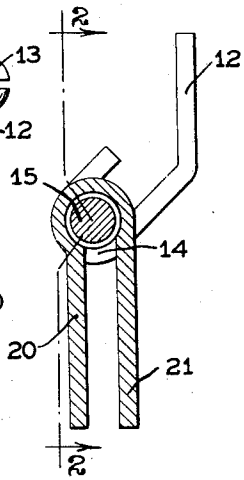


Fig. 4.

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UNITED STATES PATENT OFFICE

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FRICTION HINGE

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1 Claim. (Cl. 16—140)

This invention relates generally to a hinged construction and more particularly to a friction type of hinge adapted to be utilized with the shutter or closure member of a register.

Oftentimes it is desirable to maintain one leaf of a hinge member in a particular position with respect to the other leaf and it is an object of my invention to inventively construct a hinge whereby the above results may be expediently accomplished. Furthermore, I provide means whereby the friction between the two leaves of the hinge member may be regulated by adjusting means therebetween. In other words one leaf of the spring may be moved relatively to the other leaf of the spring by the application of force and the two leaves will remain in their adjusted position due to friction therebetween.

One of the principal features of my invention lies in the novel construction between the hinge pin and the plate member or leaf which partly encircles the same whereby the amount of friction between the two is increased very greatly due to the circumferential ridges and grooves extending around the pin.

As will be later referred to in the specification, these roughened surfaces are preferably formed by threading the pin and likewise conforming the inner side of the plate member therewith. Hence, by tightening the plate member, which encircles the pin, the degree of friction between the pin and the plate member may be closely regulated and thence the area of the contacting surfaces between these two members is materially increased. Thus, the wear therebetween will be diminished and the adjustment between these two members will be maintained a correspondingly longer time.

Further objects, and objects pertaining to the details and economy of construction and operation of my invention will definitely appear from the detailed description to follow.

In the drawing:—

Fig. 1 is a back view of a furnace register having a hinged shutter or closure member, this shutter or closure member being hingedly supported by my novel hinges.

Fig. 2 is an enlarged view of one of the hinges shown in Fig. 1, this view being taken along the lines 2—2 of Fig. 4.

Fig. 3 is a view in cross section taken along the plane of the line 3—3 of Fig. 1.

Fig. 4 is a view somewhat similar to Fig. 3, this view being taken along the plane of the line 4—4 of Fig. 1, but omitting the attaching bolts and the members to which the hinge is attached.

Similar numerals refer to similar parts throughout the several views.

Referring now to the drawing, numeral 10 designates a frame member of the usual type of furnace register, see Figs. 1 and 3, this frame 10 having a series of vertical slots or louvers 11 through which the air passes in the usual manner.

Brackets or leaves 12 have an upwardly extending portion which is fastened to the frame member 10 by means of the bolt 13 and the lower part of the member 12 is extended outwardly from the frame member and terminates in the U-shaped portion 14, such portion forming a seat for the pin or pintle members 15 which are welded thereto.

Both of the hinge structures disclosed in Fig. 1 are identical and hence only one of them will be described in detail. The pin 15, see Figs. 2, 3 and 4, is roughened at either end as by threading as indicated at 16. As shown in Fig. 2, ordinary threads are cut on the pin 15 but it is within the purview of my invention to utilize any roughened space whereby the frictional contact between the pin and the lower leaf member 20 may be increased as previously described.

A shutter or closure member 25, see Figs. 1 and 3, is adapted to close the slots or louvers 11 in the register proper, and a plate 21 extends entirely across the top of this closure member 25, being held thereon by means of the screw 26, which serves to fasten the handle member (not shown) so as to extend forwardly through one of the slots 11 in the usual fashion, and clamping screws 30 which extend through both portions of the plate member 21. In other words the clamping screws 30 extend through the portions 20 and 21 of the plate member.

The portions 20 and 21 are integrally formed, being joined at their top sides by means of loops which partly encircle the outer ends of each hinge, see Figs. 1 and 2, these loop portions being threaded to engage with the threaded ends of either pin.

The assembly may be made by sliding the pins 15, welded onto leaves 12, upwardly between portions 20 and 21 of the lower hinge member, this member being bent around the pins and bolts 30 passed therethrough as shown. Bolts 13 hold the upper leaves 12 onto the frame 10.

The operation

of my device will readily be understood from the preceding description. After the installation is in place the clamping screws or bolts 30 are tightened so as to draw the portion 20 towards the por-

tion 21, thereby decreasing the size of the loops between these two members and hence clamping the ends of the pins tightly therebetween and thus increasing the friction between these two members whereby any adjustment therebetween will be kept.

The adjustment is made by grasping the handle which extends through the front of the frame member and pushing or pulling thereupon whereby the closure member is elevated or depressed so as to be spaced from or lie against the frame member 10 thus opening or closing the louvers 11. Should the closure member 25 refuse to remain in position it is only necessary that the clamping bolts or screws 30 be tightened until the amount of friction between the two leaves of the hinges which support the coacting members is increased sufficiently so as to maintain the closure member at the desired angle.

Having thus described this invention, I claim as new and desire to secure the following combinations and elements, or equivalents thereof, by Letters Patent of the United States.

I claim:

A hinge comprising, a first hinge member, a hinge pin rigidly fixed to the first hinge member, said hinge pin having a portion of its ends provided with threads thereon, and a second hinge member made from a flat piece of sheet metal bent to surround said threaded portions of the said hinge pin approximately 300 degrees and then terminating in spaced parallel members, said sheet metal piece having grooves formed in the surface thereof, which grooves receive said threads on said hinge pin and means to regulate the degree of frictional contact between the said grooves and threads, said means extending between the spaced parallel members.

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