United States Patent

Shriner

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[54] HINGE CLIP ASSEMBLY

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[52] **U.S. Cl.** **16/128**, 16/150

[51] **Int. Cl.** **E05d 9/00**

[58] **Field of Search** ..... 126/194, 191; 24/73 B; 16/128, 16/150, 158, 139, 185, 142; 248/361, 223; 220/31 SR

[56] **References Cited**

UNITED STATES PATENTS

2,369,480	2/1945	Mills	16/158
2,206,588	7/1940	Tritt	16/158

FOREIGN PATENTS OR APPLICATIONS

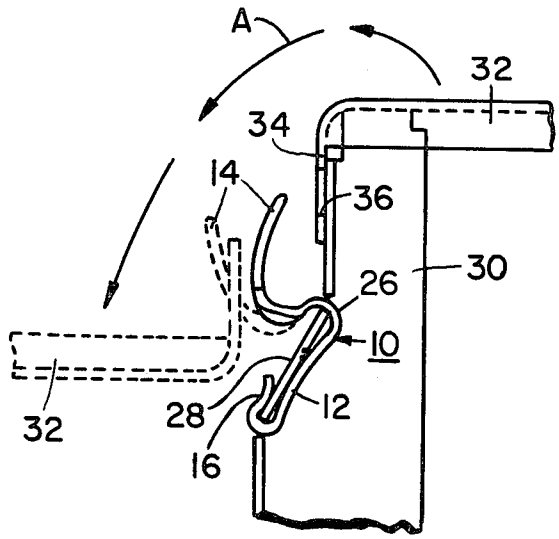
862,511	3/1961	Great Britain	16/158

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[57] **ABSTRACT**

A hinge clip assembly having an attachment body portion and a retaining finger portion is frictionally mounted on a rear support bracket of a major domestic appliance, with the retaining finger portion extending in a curvilinear upward position to operatively project within an opening in a rear flange on a cover member for such appliance, when such cover member is pivoted to an open position, and to retain such cover member in such open position to facilitate the servicing of such appliance.

3 Claims, 5 Drawing Figures



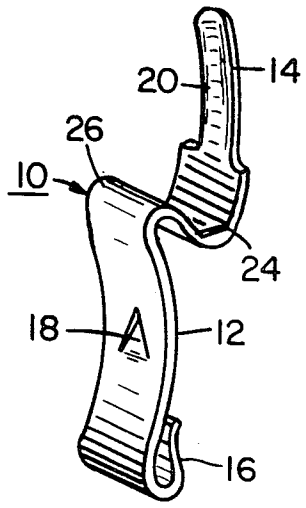


Fig. 1

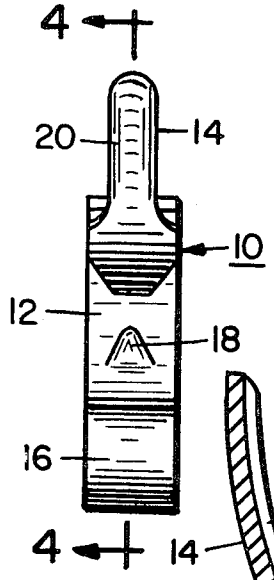


Fig. 2

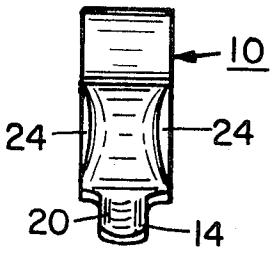


Fig. 3

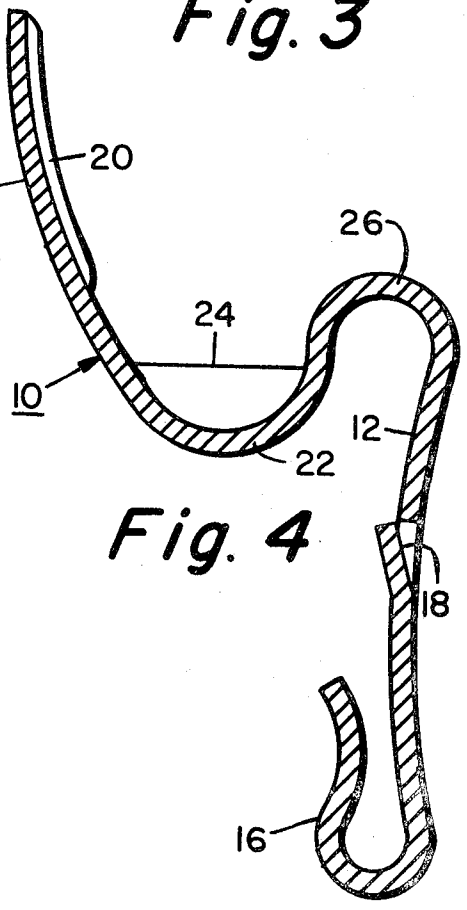


Fig. 4

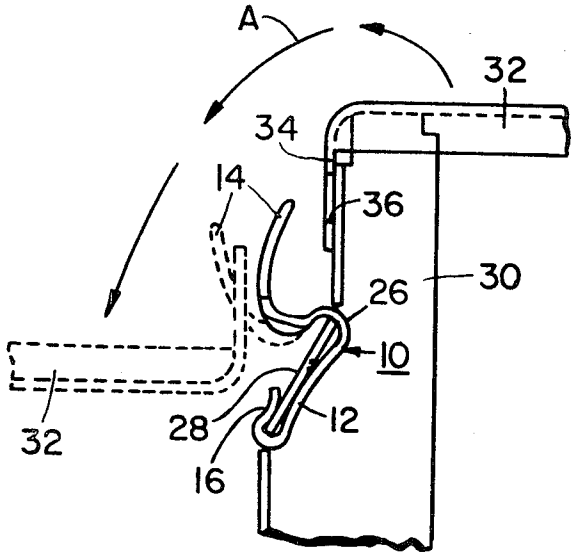


Fig. 5

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HINGE CLIP ASSEMBLY

BACKGROUND OF THE INVENTION

In the past it has been customary to service the heating units of an electric range by merely lifting the heating units outwardly through an opening in a fixed top surface of the range. However, with the advent of the new glass-ceramic cook top ranges having concealed heating units, it has become necessary to remove the upper surface or closure portion of the appliance to gain access to the heating units. In view of the weight and extent of the cooking surface, normally two service personnel were required in order to remove the range top for servicing.

It has been known to utilize hinges in such appliances as washers and driers in order to pivot the upper lid or cover upwardly for service. However, such hinges normally only allowed a 90° pivoting of the cover, and did not permit the ready removal of the cover portion from the remainder of the unit if this were required.

The present invention obviates the problems encountered with the prior art devices by providing an easily mountable hinge clip which operatively receives and retains a top or cover portion of an appliance in an open position for servicing.

SUMMARY OF THE INVENTION

An improved hinge clip assembly is provided on each of a plurality of rear support brackets of an appliance for receiving and retaining an upper surface or closure portion of the appliance when it is pivoted backwardly into an open or inoperative position. Each hinge clip assembly is formed of a unitary structure having an attachment body portion and a retaining finger portion. The attachment body portion is frictionally mounted on and compressibly secured to a mounting flange of a rear support bracket of the appliance, and the retaining finger portion extends curvilinearly upwardly therefrom to project within an opening formed in a rear flange on the top or upper cover portion of the appliance, when such cover portion is pivoted to an open position. The attachment body portion is preferably concavo-convex in order to provide added gripping and resiliency. A resilient compression clamp is provided at one end of the attachment body portion, and a positioning or gripping tab is formed centrally thereof in order to retain a hinge clip assembly upon the mounting flange of each rear support bracket. The retaining finger portion is also formed with a concave configuration for added strength, and has a lower U-shaped section provided with crimped edge portions which reinforce such section and retard flexing or bending of the clip within the U-shaped section. The attachment body portion and the retaining finger portion are integrally formed together by means of a flexing or bending area adjacent the upper edge of the mounting flange.

Although the hinge clip assembly is not attached to the upper surface or closure portion of an appliance, as the upper portion is pivoted backwardly the retaining finger portion of each hinge clip assembly projects within openings formed in a rear flange of such top surface or cover portion to not only facilitate the pivoting of the upper portion to an open position, but also to retain it in such open position. As a result, the hinge clip assemblies permit the cover portion to be pivoted backwardly a full 180° to thereby expose the inner working elements of the appliance and retain it in such position for ready accessibility and service.

It thus has been an object of the present invention to provide an inexpensive and simplified hinge clip assembly which is easily mountable on an appliance so as to operatively receive and retain a cover or top surface portion of the appliance as it is pivoted to an open position, so as to facilitate service and accessibility to the inner portions of the appliance.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a hinge clip assembly embodying the present invention.

FIG. 2 is an elevational view of the hinge clip assembly shown in FIG. 1.

FIG. 3 is a top plan view of the hinge clip assembly.

FIG. 4 is an enlarged side elevational view in section taken along line 4—4 of FIG. 2.

FIG. 5 is a somewhat schematic fragmental elevational view illustrating the mounting of a hinge clip assembly of the present invention upon an appliance and illustrating its operation with respect to the pivotal movement of an upper portion of the appliance.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, and particularly FIGS. 1–4, a hinge clip assembly **10**, embodying the present invention, is shown having an attachment body portion **12** and a retaining finger portion **14**. The attachment body portion **12** is preferably of a concavo-convex configuration and has a resilient compression clamp portion **16** formed on its lower end, and a positioning or gripping tab **18** formed centrally thereof.

As shown particularly in FIG. 4, the retaining finger portion **14** has a concave section **20** along its outer extent and an inner U-shaped section **22** provided with crimped edge portions **24**. The concave section **20** provides added strength to the finger portion **14**, whereas the crimped edge portions **24** of U-shaped section **22** reinforce the finger portion to prevent bending or flexing within section **22**. The attachment body portion **12** and the retaining finger portion **14** are formed integrally, preferably of suitable spring steel, and are joined together by a flexing or bending area **26**.

Referring now to FIG. 5, the hinge clip assembly **10** is shown positioned upon a mounting flange **28** of a rear support bracket **30** of a major domestic appliance, such as a cooking range. The appliance has an upper closure or surface portion **32** provided with a rear flange **34** having openings such as slots **36** for operatively receiving a retaining finger portion **14** of the clip assembly when the cover member **32** is pivoted backwardly into an open position for servicing.

In operation, a hinge clip assembly **10** is frictionally positioned upon each mounting flange **28**, with the resilient compression clamp portion **16** securely gripping the mounting flange, and the positioning or gripping tab **18** operatively biting into the flange to prevent lateral or rotational movement of the clip. After the usual mounting screws are removed from the upper closure **32**, it is pivoted upwardly and rearwardly as shown by the arrows A, such that retaining finger portions **14** project within openings **36** formed in the rear flange **34**. Since the retaining finger has a strengthening concave outer section **20** and crimped-edge reinforced lower U-shaped section **22**, flexing of the clip assembly is restrained in these areas and is limited primarily to the flexing and bending area **26**, which joins the finger and body portions together adjacent the upper edge of the mounting flange **28**.

Although the cover member **32** may be merely pivoted into a substantially perpendicular position for servicing, such as when it may be propped up against an adjacent wall, it may be pivoted through a full 180° arc as shown in dotted lines in FIG. **5**. Preferably one hinge clip assembly **10** is mounted on the back of the appliance adjacent each edge, so that as the cover member is pivoted upwardly and rearwardly about its back edge, the fingers **14** will project within the openings **36** formed in rear flange **34**. The spring steel of the hinge clips is sufficiently strong to support the cover member, and flexing is occassioned in the curvilinear flexing and bending area **26** which joins the body and finger portions together. The concavo-convex configuration of the body portion maintains the body portion in contact with the mounting flange irrespective of the flexing produced in the bending area **26**. After a desired inspection or service is completed, the cover member is again pivoted on the hinge clip assembly up into operative position upon the appliance as shown in the full lines in FIG. **5**.

The hinge clip assembly of the present invention thus provides an economical and simple means for facilitating the easy removal, by a single individual, of an upper closure or surface cover member of a major appliance so as to facilitate internal access for service and inspection. Although I have described the now preferred embodiments of my invention, it will be apparent that various changes and modifications may be made thereto without departing from the spirit and scope thereof as defined in the appended claims.

I claim:

1. A hinge clip assembly mountable on a support bracket of a major appliance for receiving and retaining an upper surface portion of the appliance as it is pivoted to an open position for inspection and servicing which comprises, an attachment body portion for frictionally engaging a mounting flange on said support bracket, a retaining finger portion for projecting within an opening formed in a flange on said upper surface portion to facilitate pivotal movement of such surface portion and retain the same in an open position, said attachment body portion having means including a resilient compression clamp portion adjacent one end of said body portion for compressibly clamping the body portion on the mounting bracket, said retaining finger portion having strengthening and reinforcing means for inhibiting the flexing thereof, means flexibly connecting said attachment body portion and said retaining finger portion together as an integral unit, and said attachment body portion being formed with a concavo-convex contour which is centrally curved inwardly toward said mounting flange to maintain operative engagement with said mounting bracket independently of any bending which may occur within said flexing means.

2. A hinge clip assembly as defined in claim 1 wherein said retaining finger portion includes a U-shaped section having crimped edge portions forming a part of said strengthening and reinforcing means.

3. A hinge clip assembly as defined in claim 1 wherein said strengthening and reinforcing means includes a concave outer section formed in said finger portion.

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