May 19, 1959 R. W. SITLER 2,887,193

HINGE CONSTRUCTION

Filed April 19, 1954

Fig. 1

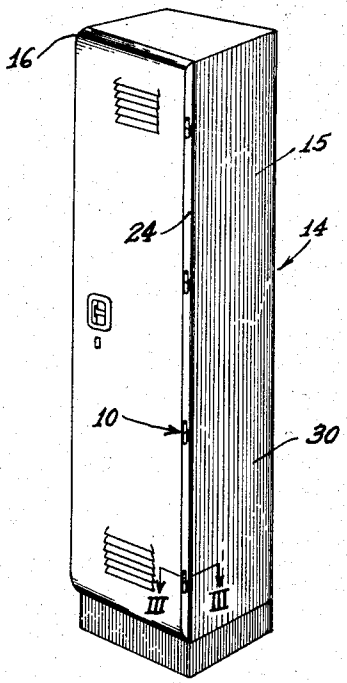


Fig. 2

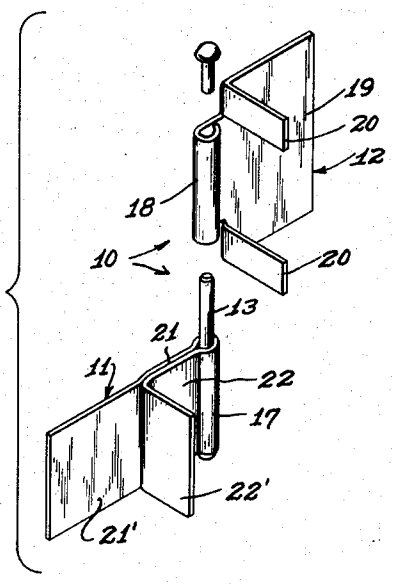
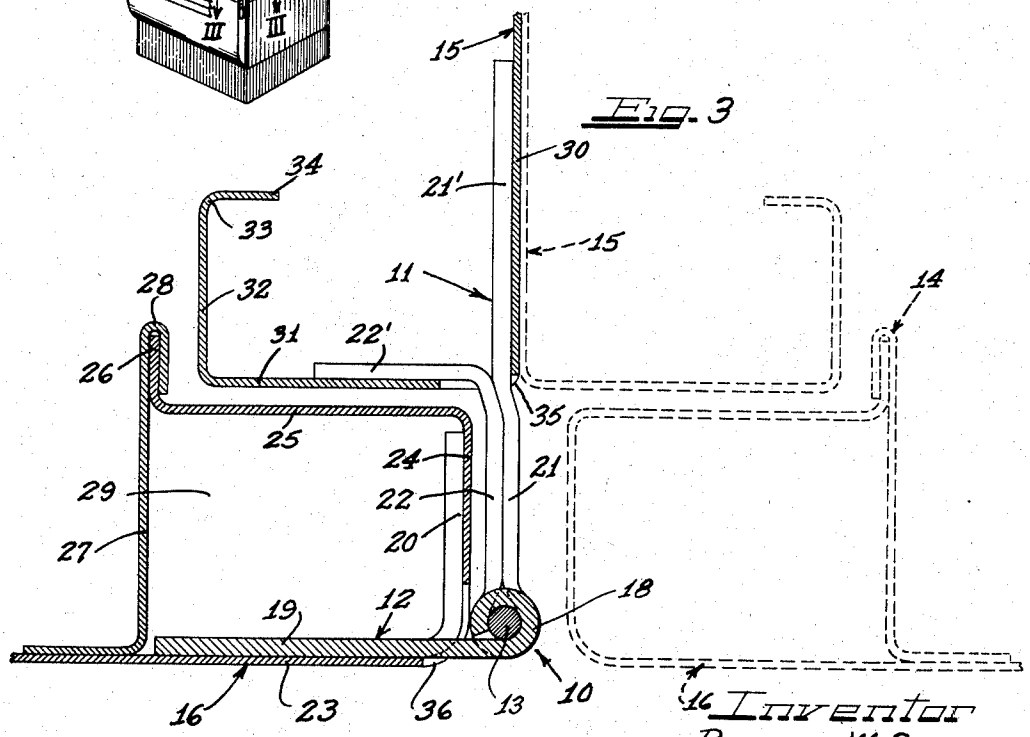


Fig. 3



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United States Patent Office 2,887,193
Patented May 19, 1959

2,887,193

HINGE CONSTRUCTION

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Application April 19, 1954, Serial No. 423,880

5 Claims. (Cl. 189—46)

This invention relates to a novel hinge construction adaptable to connect two offset members such as a door and a cabinet wall or the like.

An object of this invention is to provide a novel hinge construction which may be used most suitably with two offset members each having abutting margins and further, to permit one of the members to swing on an axis substantially in the plane of its face but remote from the other, yet over and directly opposite the planar surface of the other member.

Another object of this invention is to provide a novel hinge construction which when used, for example, with a series of lockers each having abutting margins, will permit an offset door of one of the lockers to swing free of the adjoining locker and door without contacting the same.

Still another object of this invention is to provide a novel plate-type hinge construction which is of a very sturdy type and especially lends itself to use where a particularly strong hinge construction is needed having differently constructed hinge plates.

In accordance with the general features of this invention, there is provided in a hinge construction including a member having a planar side with a peripheral edge, a second member adapted to overlie the side and having an outer face separated from the side by an edge perpendicular to the side adjacent to but offset over the side from the peripheral edge and being parallel to but spaced from the peripheral edge and hinge plates pivotally connected along an axis in the space and substantially at the plane of the front face of the second member.

Another feature of this invention relates to the provision in a hinge construction of two overlapping members to be hinged together along a vertical pivotal axis, the first of the members having an apertured vertical margin extending laterally and remote from the pivotal axis, and the second of the members overlying the first and having an apertured edge at the axis and an underturned vertical margin adapted to overlie and be parallel to the aperture vertical margin of the first member, and hinge means connecting the members along the axis and comprising upper and lower hinge plates, one having an elongated leg extending from the axis over the apertured edge of the second member and through said apertured margin of the first member and secured therebehind to the first member, the other plate extending from the axis directly through the apertured edge of the second member and being secured therebehind, the hinge plates having vertically aligned pintle portions hinged to one another along the axis.

Other objects and features of this invention will more fully appear from the following detailed description taken in connection with the accompanying drawings which illustrate a single embodiment thereof and in which:

Figure 1 is a perspective view of a locker cabinet and door with the door and locker body having vertically extending abutting margins and showing how my novel hinge construction connects the locker door and body;

Figure 2 is an exploded perspective view of my novel hinge construction illustrating the interrelationship of the three component hinge parts, namely, the pintle, the upper hinge plate, and the lower hinge plate; and

Figure 3 is a horizontal cross-sectional view taken on the lines III—III of Figure 1 looking downwardly illustrating how my novel hinge construction connects a locker door and locker body and showing by dotted lines the relationship of the hinged construction to an adjoining locker of a given bank.

As shown on the drawings:

The details of the hinge per se are best shown in the exploded view of Figure 2. This novel hinge is designated generally by reference numeral **10** and is composed of three main parts, namely, a lower hinge plate **11**, an upper hinge plate **12**, and a pintle **13**.

Figure 1 illustrates my novel hinge construction **10** adapted for use with a locker construction **14** having a main locker body **15** and an offset or overlapping type locker door **16**. It is to be understood, of course, that in using my novel hinge construction **10** in connection with a locker construction **14**, it is for the purpose of illustrating and exemplifying my invention, for such a hinge construction might have any number of varied applications, such as with other types of cabinets, without departing from the novel scope of the instant invention.

As best shown in the exploded view of Figure 2, it is seen that each hinge **10** has a lower hinge plate **11**, an upper hinge plate **12** adapted to be superimposed thereupon, and a hinge pintle or pin **13** extending through the turned pintle portions **17** and **18** of the plates **11** and **12**, respectively, in the usual way.

It will also be perceived from Figure 2 that the upper hinge plate **12** has a main leg **19** and two perpendicularly extending ears **20—20** protruding from the main leg **19** substantially at opposite ends of and adjacent the turned pintle portion **18**. The leg **19** and the ears **20—20** serve as connecting means to connect the upper hinge plate **12** to a member to be hinged and which is described later herein.

Similarly, as with the aforementioned upper hinge plate **12**, the lower hinge plate **11** has a main leg **21** but which is elongated and a shorter leg **22**. These legs **21** and **22** have their portions immediately adjacent pintle portion **17** in abutting or contiguous engagement. Free end **22'** of leg **22** is bent at right angles to free end **21'** of leg **21** so that such ends extend in divergent directions. These divergent legs **21—22** are adapted to provide a firm support for the hinge plate **11** when the ends of legs **21** and **22** are welded on a supporting member hereinafter described.

Turning now to Figures 1 and 3, it will be seen that the offset locker door **16**, which comprises one member to be hinged, has a rearwardly extending vertical edge **24** adjacent my novel hinge construction **10** and generally at right angles to the front face **23** of the door. Extending inwardly from this vertical edge **24** (Figure 3) is a vertically extending underturned integral margin **25** terminating in the terminal flange **26**. Welded on the rear side of the door **16** is an L-shaped flange **27** equipped with a curled-under end portion **28** adapted to overlap and be interconnected with the terminal flange **26** to form a box-like cavity or post **29**.

Referring now to the cabinet or locker body **15** in Figure 3, which is the other member to be hinged, it is seen that the locker side wall **30** terminates and is at right angles with an inward turned margin **31** (Figure 3) and generally parallel to the face **23** of the door **16**. The margin **31** has a right angular rearwardly extending flange **32**, which in turn is angled at **33** forming a terminal flange **34**.

Hence, it can readily be seen, that the door margin 25 and the locker body margin 31 are adapted to overlap or abut one another when the door 16 is in a closed position with relation to the locker body 15.

Now having described one form of supporting structure for my novel hinge 10, I will now show how the two working together provide the unitary result of enabling one offset wall or door to swing free of a second and adjacent wall without having to move beyond or past the plane of the side or edge of the second wall. This arrangement is advantageous in precluding interference of the swinging member with an adjoining structure.

Figure 3 shows the locker margin or planar side 31 to be apertured at 35 along the corner edge of the cabinet body. This aperture 35 is adapted to receive therethrough legs 21' and 22' of the lower hinge plate 11 and when in bottomed relation, the divergent legs 21' and 22' lie flush with the rearward surfaces of the side wall 30 and the margin 31, respectively.

Figure 3 also shows the vertical edge 24 to be apertured at 36 along the corner of the face 23 of door 24. Now, it will be noted that the leg 19 of the upper plate 12 as well as the ears 20—20 are substantially disposed within the cavity 29 defined by the flanges 24, 25, 27 and the face 23 of locker door 16, proper. The legs 19 and the ears 20—20 are suitably anchored to the interior surfaces of this hollow corner post defined by the corner of the door with the turned pintle portion 18 located outwardly beyond the opening 36 in the corner post so that the pintle portion 18 is vetrically aligned with the lower pintle portion 17 of the lower plate 11. This construction is such as to locate the pivot axis of the hinge 10 substantially aligned with or slightly inside the side wall 30 of the cabinet and substantially at the plane of the outermost face of the door 16. In other words, the pivot axis is in the space between the plane of the outer surface of locker body side 30 and the plane of door edge 24.

Now, in Figure 3 I have illustrated, by dotted lines, an adjoining locker or cabinet 14 positioned in bank arrangement with the above described locker as is common practice in the mounting of the lockers. From this illustration, it will be perceived why it is necessary to locate the axis of the door hinge substantially at the outermost plane of the door as aforesaid so that upon swinging open of the door, the door and hinge will not interfere with or strike the door of the adjoining cabinet in the bank.

It is only by virtue of the manner in which the legs of the lower hinge plate 11 are projected along the vertical side edge 24 of the door inside of the plane of locker body side 30 that it is possible to dispose the piovt axis in the proper locale. Needless to say, the angular arrangement of the legs of the lower plate 11 is such as to enable proper support of the plate 11 so that it can effectively carry the weight of the door and minimize the likelihood of the springing of the door.

Features of the locker are also covered in my earlier filed application relating to a locker construction, Serial No. 418,941, filed March 26, 1954 from which the present subject matter has been divided with respect to the particular hinge construction disclosed and claimed herein.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In combination, a stationary wall having a planar side and a peripheral edge and a sheet metal door and hinge structure, said door comprising a sheet metal panel with a turned under tubular margin at one edge of said panel for abutment against the peripheral edge with said margin including a rearwardly extending marginal flange and with the rearwardly extending marginal flange and said door offset inwardly of the planar side leaving a vertical recess disposed inwardly of the planar side on the same side of the planar side as the door, said marginal flange being angled relative to said panel and having an outer end junctioned with said panel, said hinge structure including stationary and swingable hinge plates with the swingable plate movable with said door and mounted on said tubular margin, said stationary hinge plate having an outer tip generally at the junction of said outer end with said panel and extending rearwardly therefrom in said recess externally of and along and rearwardly beyond said marginal flange for attachment to a cabinet and the like, said plates being pivotally connected exteriorly of said tubular margin generally at the junction of said outer end with said panel.

2. A sheet metal door and hinge structure comprising a sheet metal panel with a turned under tubular margin at one edge of said panel with said margin including a rearwardly extending marginal flange, said marginal flange being angled relative to said panel and having an outer end junctioned with said panel, said hinge structure including stationary and swingable hinge plates with the swingable plate movable with said door and mounted on said tubular margin, said stationary hinge plate having an outer tip generally at the junction of said outer end with said panel and extending rearwardly therefrom externally of and along and rearwardly beyond said marginal flange for attachment to a cabinet and the like, said plates being pivotally connected exteriorly of said tubular margin generally at the junction of said outer end with said panel, said tubular margin having an opening generally at the junction of said outer end with said panel and said swingable hinge plate extending through said opening and fastened to said door.

3. A sheet metal door and hinge structure comprising a sheet metal panel with a turned under tubular margin at one edge of said panel with said margin including a rearwardly extending marginal flange, said marginal flange being angled relative to said panel and having an outer end junctioned with said panel, said hinge structure including stationary and swingable hinge plates with the swingable plate movable with said door and mounted on said tubular margin, said tubular margin having a recess and a pair of inner angularly related wall surfaces internally of the tubular margin, said swingable plate including a hinge portion provided with annular legs extended through the recess into the tubular margin with the angular legs attached to the angularly related wall surfaces of the tubular margin, said stationary hinge plate having an outer tip generally at the junction of said outer end with said panel and extending rearwardly therefrom externally of and along and rearwardly beyond said marginal flange for attachment to a cabinet and the like, and a pin with said hinge plates each having tubular pintle portions with said pin connecting said pintle portions together exteriorly of said tubular margin generally at the junction of said outer end with said panel.

4. A sheet metal door and hinge structure comprising a sheet metal panel with a turned under tubular margin at one edge of said panel with said margin including a rearwardly extending marginal flange, said marginal flange being angled relative to said panel and having an outer end junctioned with said panel, said hinge structure including stationary and swingable hinge plates with the swingable plate movable with said door and mounted on said tubular margin, said stationary hinge plate having an outer tip generally at the junction of said outer end with said panel and extending rearwardly therefrom externally of and along and rearwardly beyond said marginal flange for attachment to a cabinet and the like, said plates being pivotally connected exteriorly of said tubular margin generally at the junction of said outer end with said panel, said stationary hinge plate comprising a strip of material having legs folded back into abutting engagement and generally parallel with one another leaving a looped pintle portion at one end where the legs are joined and with the generally parallel legs extending rearwardly

beyond the tubular margin in generally parallel relation for connection to a cabinet and the like.

5. In a hinged structure, a first member having a planar side with a peripheral edge and a second member adapted to overlie said edge and having an outer face separated from said edge by a second edge perpendicular to said peripheral edge with said second member as well as said second edge adjacent to but offset inwardly from said planar side over said peripheral edge defining a pocket, hinge plates pivotally connected to the respective members with the hinge plates having a pivotal axis externally of said second edge and said face in said pocket and with the axis lying substantially in the plane of the outer face of said second member, and with one of said plates extending rearwardly in said pocket from said axis and attached to the first member.

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