Aug. 16, 1966 A. D. DUGAN, JR 3,266,191

DOOR CLOSER MOUNTING

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Fig. 1.

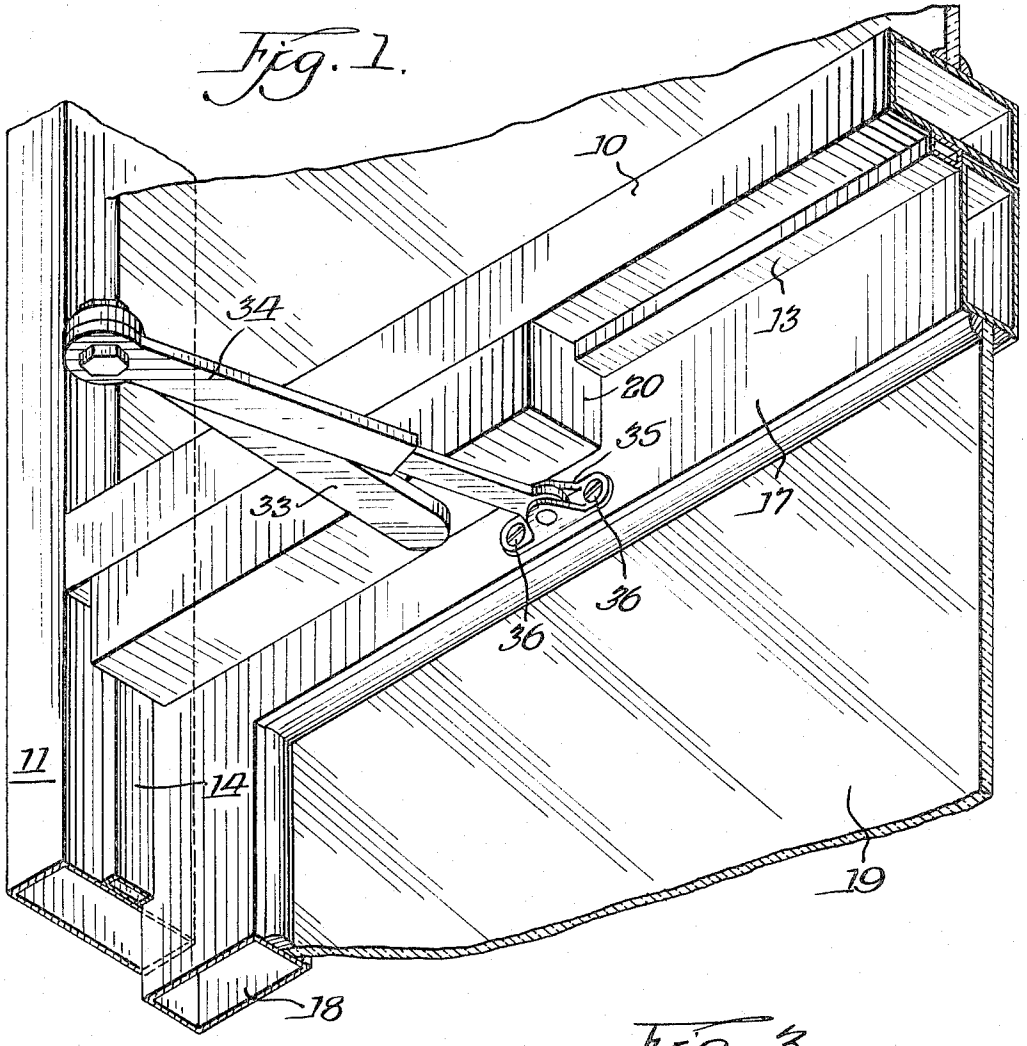
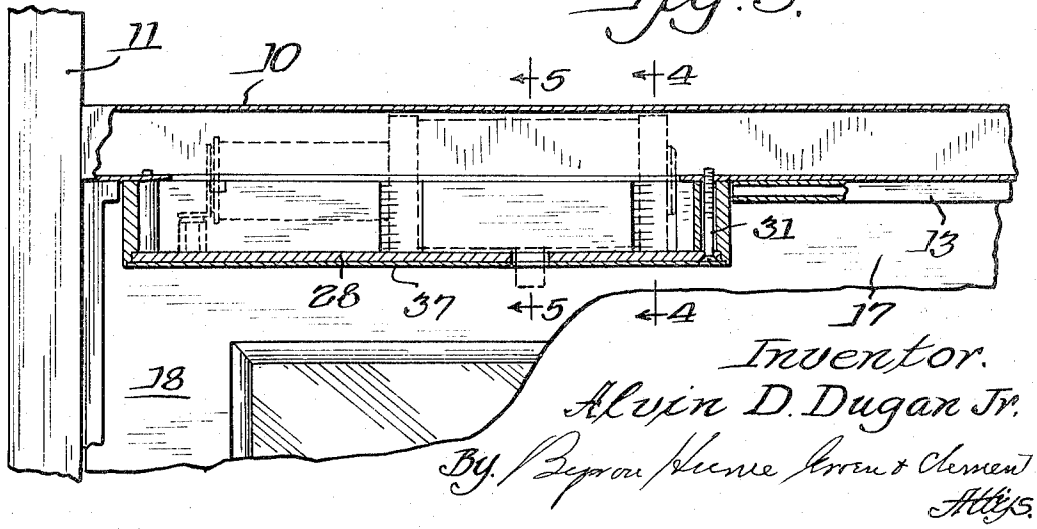


Fig. 3.



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Fig. 2.

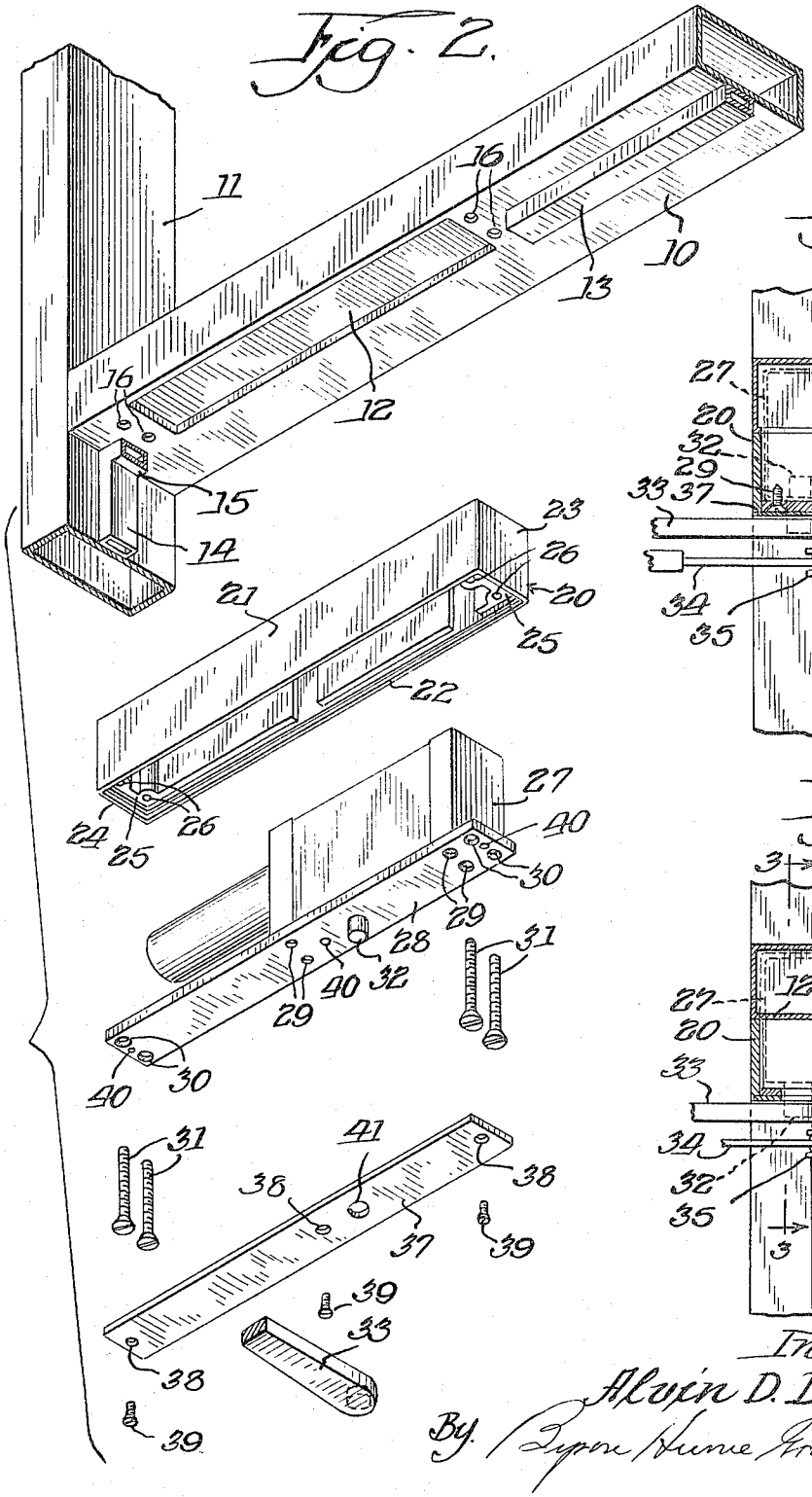


Fig. 4.

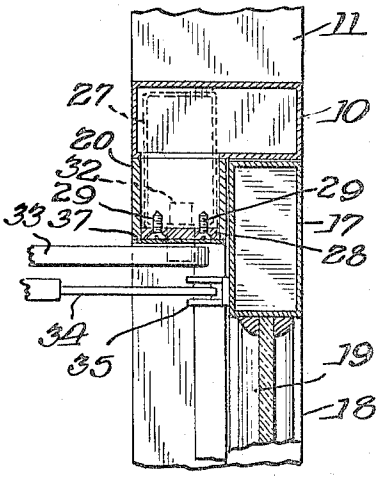
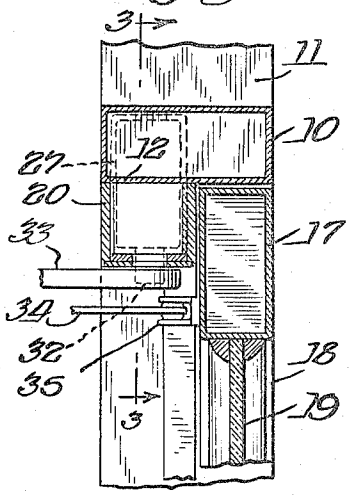


Fig. 5.



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DOOR CLOSER MOUNTING

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2 Claims. (Cl. 49—504)

My invention relates to a mounting means for a door closer and has particular reference to mounting means for a usual type of door closer in which the door closer is partially mounted within the door frame header and extends into the mounting member, which enables the use of a header for the door frame of a smaller size and of a dimension of approximately 1¾" in height, and also provides a mounting means wherein the door closer is held in fixed operative position and is completely concealed from view.

The common practice in mounting these door closers, which are fairly standard in dimension, was upon the doors for many years, where the door closers were open to view, but in recent years particularly when the use of hollow extruded metal sections for door frame headers became common, the practice has been to mount the door closers within these sections where they are concealed from view and only the operating arms connecting the door closer with the door were visible. The door closer is of a spring biased variety which is loaded by the opening of the door thereby placing the spring in the door closer under tension, and with the closing of the door the force of the spring is released and controlled so as to produce an even, smooth closing movement of the door. These door closers, while of fairly standard size, required at least 3⅝" clearance in the door frame header for mounting purposes. Therefore, if a 4" header were used on the door frame, adequate room was provided for the mounting of the door closer member, but recently the headers have been decreased in thickness to something like 1¾" which does not provide adequate vertical space in the header within which the door closer can be mounted.

It is a primary object of this invention to provide a door closer mounting, therefore, which can be used with door frame headers of lesser dimension than that heretofore employed.

Another and further object of my invention is the provision of a door closer mounting member within which the door closer can be assembled and secured within the mounting member and the mounting member fitted against and secured to the door frame header thereby being mounted partially within the header and partially within the door closer mounting member thereby providing a substantial mounting for the door closer and in such position that the door closer is not open to view.

Another object of my invention is the provision of a door closer mounting member which can be assembled into unit form for attachment to a door frame header as a unit and which also can be readily removed from the header in unit form and the door closer removed from the mounting member for making repairs to the door closer should such repairs be necessary in the normal operation and upkeep of the door closer.

These and other purposes of my invention will be more fully and better understood by reference to the accompanying drawings and in which:

FIGURE 1 is a perspective view of portions of a door frame, of a door mounted therein, and a door closer secured thereto in operative position;

FIGURE 2 is an exploded view showing portions of the door frame, the door closer mounting member, a door closer, and a cover for the door closer which, when in assembled relation is shown in FIGURE 1 of the drawings;

FIGURE 3 is a view partially in section and partially in elevation on lines 3—3 of FIGURE 5;

FIGURE 4 is a transverse sectional view on lines 4—4 of FIGURE 3; and

FIGURE 5 is a transverse sectional view on lines 5—5 of FIGURE 3.

Referring now specifically to the drawings and in which like reference characters refer to like parts throughout, the usual door header **10** is shown which is secured to a door jamb **11** in end-to-end abutting relationship therewith and secured together in any common means now used in the making of door frames. The header **10** is substantially a unit structure of hollow metal extruded design and has an elongated opening **12** in the lower side thereof for purposes hereinafter described. A door abutting strip **13** is secured to the header **10** in any approved manner, while a similar strip **14** is provided, which is fitted against the inner face of the door jamb **11** with a short abutting strip **15** being provided at the end of the door header jamb **10**. Pairs of internally threaded spaced openings **16, 16** are provided in the header **10** adjacent each end of the elongated opening **12** in the header **10** for purposes hereinafter described. A portion of the upper end of a door is shown in closed position in the door frame which consists of a rail **17**, a hinge stile **18** and the usual glass **19** which is fitted into the door rails and stiles in the usual manner and has nothing to do with my present invention.

A door closer mounting member indicated as a whole as **20** is provided which preferably is integrally formed with side portions **21** and **22** and end portions **23** and **24** which end members **23** and **24** have reinforced portions **25, 25** therein through which openings **26, 26** extend for purposes hereinafter described. The mounting member **20** is open at its top and bottom and is of a dimension slightly greater in width than is the opening **12** in the header **10** and slightly longer than is the said opening **12**, over which the mounting member is fitted in the assembled position of the structure with the upper edges of the side portions **21** and **22** and the end portions **23** and **24** in abutting engagement with the lower surface of the header **10**.

A door closer unit **27** is provided which has a base plate **28** secured thereto by means of screws **29, 29** with the base plate **28** having end portions which project slightly beyond the ends of the door closer unit **27** and have a plurality of openings **30, 30** therethrough in which screws **31, 31** are positioned, which screws also extend into the spaced openings **26, 26** in the reinforced end portions **25, 25** of the mounting member **20** and are threaded into the openings **16, 16** in the header **10** and turned up tightly in position so that the mounting member **20** and the door closer unit **27** are securely fastened together and are secured to the header **10**. The door closer **27** extends through the mounting member **20** and through the opening **12** and into the header **10** so that when the mounting member **20** is finally secured into position, the door closer is contained partially within the header **10** and the mounting member **20**.

The usual door actuating spindle **32** forming a part of the door closer **27** is provided and extends through an opening in the base plate **28** and has an arm **33** secured thereto, which arm in turn is pivotally secured to a second arm **34**, the free end of which is secured to the top rail **17** of the door by means of a clip **35** and screws **36, 36** through which torsion movement from the member **32** is conveyed to the arms, thereby enabling the closing member to function in its operation of closing the door in the operation of the device. These parts are standard for the usual door closer and form no part of my present invention.

A cover plate 37 is provided for the door closer which has screw openings 38, 38 therein through which screws 39, 39 pass to secure the cover plate to the base plate 28 of the door closing mechanism, which screws are fitted into internally threaded openings 40, 40 in the base plate 28 of the door closer mechanism 20. An opening 41 is provided in the cover plate 37 through which the torsion member 32 extends, which torsion member is fastened to the lever 33 as hereinabove described.

In operation, the device performs precisely as does the usual door closer mechanism and the assembling and mounting of the device is believed to be readily understood from the foregoing description and from the illustrations, particularly of the exploded view of FIGURE 2. The header 10 with the opening 12 therein and the screw openings, is usually prepared in the shop which fashions the door frames in accordance with the specifications usually supplied by the architect. It is very easy to place the door closer mechanism into the mounting member within which it fits rather snugly and the mounted member, the door closer, and the base unit are all secured to the door frame header 10 by the screws and held securely in position. The cover plate 37 merely serves to add to the appearance of the device and adds nothing either to the function or the operation of the structure.

The result is that a trim, neat-appearing arrangement is provided in which the door closer is completely concealed and, therefore, fits the needs of both architects and interior decorators as far as appearance is concerned, and also, should the door closer need repair the cover 37 can easily be removed and the door closer and mounting member can be removed and separated so that repairs may be made to the door closer in the usual manner. Access to the door closer, therefore, is very easy for a repair man for repair purposes of the door closer. Through the use of the door mounting member the door closer can be placed in position in a variety of headers of lesser dimensions and of a size now common in leading architectural needs, which mounting has not been possible heretofore.

While I have described more or less precisely the method employed and the apparatus used therewith, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit or scope of my invention.

I claim:

1. In combination with a hollow door frame header having an opening in one of its sides, a door closer mounting member having opposing first and second open sides and being closed at its other sides and at its ends, said mounting member being secured to said door frame header and projecting substantially therefrom, said first open side communicating with said opening in said door frame header; and a door closer mechanism mounted inside said mounting member and extending from said second open side through said first open side substantially into said door frame header through said opening in said door frame header so that said door closer mechanism is partially within said door frame header and partially substantially extended therefrom inside said mounting member.

2. In combination with a hollow door frame header having an opening in one of its sides, a door closer mounting member having opposing first and second open sides and being closed at its other sides and at its ends, said mounting member being secured to said door frame header and projecting substantially therefrom, said first open side communicating with said opening in said door frame header; and a door closer mechanism mounted inside said mounting member, said door closer mechanism having a mounting base secured over said second open side, said door closer mechanism extending from said second open side through said first open side substantially into said door frame header through said opening in said door frame header so that said door closer mechanism is partially within said door frame header and partially substantially extended therefrom inside said mounting member; and fastening means extending from said mounting base through said mounting member into said door frame header.

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