J. ALSFASSER.

FUSIBLE LINK.

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1,039,077.

Patented Sept. 24, 1912.

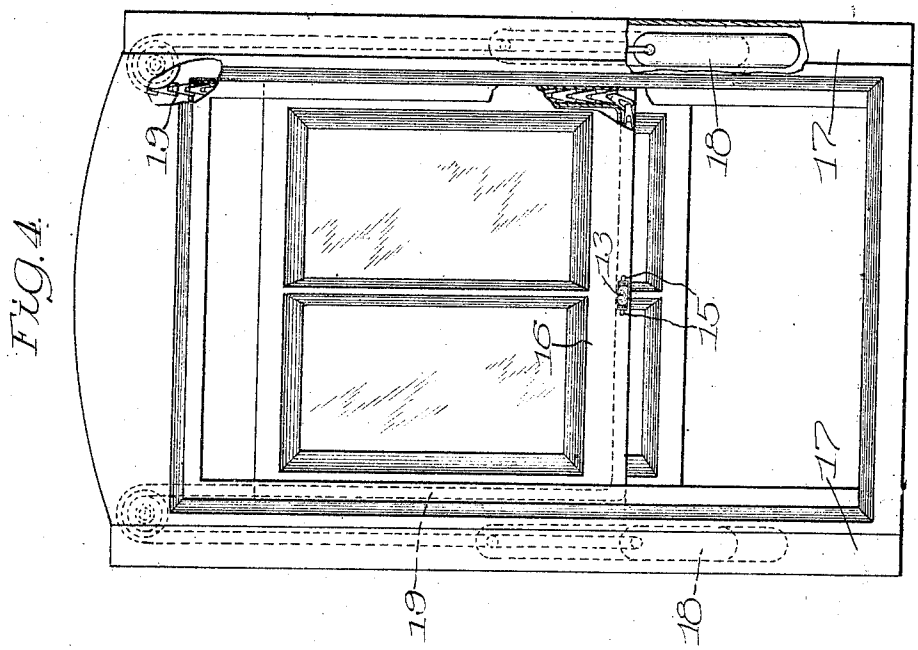

Fig. 4.

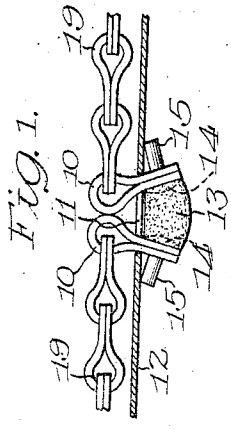

Fig. 1.

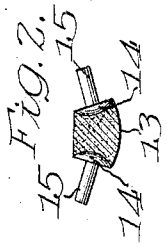

Fig. 2.

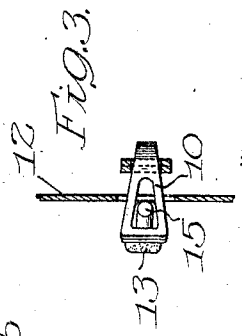

Fig. 3.

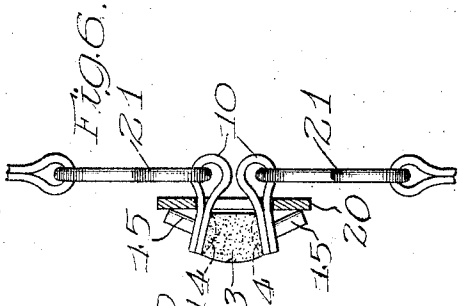

Fig. 6.

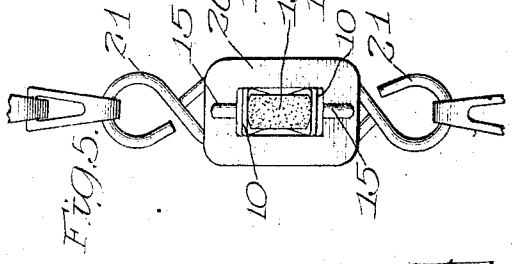

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOSEPH ALSFASSER, OF CHICAGO, ILLINOIS.

FUSIBLE LINK.

1,039,077. Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed August 23, 1911. Serial No. 645,589.

To all whom it may concern:

Be it known that I, JOSEPH ALSFASSER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fusible Links, of which the following is a specification.

This invention relates to links which are susceptible to the action of heat, commonly known as fusible links, and the principal object of the invention is to provide an improved, simple and cheap device of the class described, which is effective and efficient in operation.

For the attainment of these ends, and the accomplishment of other new and useful objects, as will appear, my invention consists in the features of novelty in the construction, combination and arrangement of the several parts generally described in the specification and shown in the accompanying drawing, and more particularly pointed out in the appended claims.

In the specification Figure 1 is a view showing a device constructed in accordance with the principles of my invention; Fig. 2 is a view of fusible material in position between two end pieces which are less susceptible to heat; Fig. 3 is a view partly in section of a fusible link as shown by Fig. 1; Fig. 4 illustrates the application of my fusible link to a window sash movably mounted in a frame; Fig. 5 is a view of a fusible link as employed in connection with a tension chain; Fig. 6 is a side view of the same with the apertured plate in section.

In devices of this class it is customary to dispose the material most susceptible to heat in such a manner that the fusible material is not exposed to the atmosphere and is usually under a tension between two or more other members. In the present device the material most susceptible to heat is disposed so that it may be subjected to the action of heat on all sides, and which is normally under compression. By having the fusible material under compression not only is a stronger joint or connection made, but also the action of the fusible material is made more positive. In the specification the material most susceptible to heat is referred to as the "fusible material," but of course it is well known that all the materials of which such a device is usually constructed are fusible.

Referring now more particularly to the drawing, chain links 10 or other suitable or similar members are inserted through the aperture 11 of a plate 12. On the other side of the plate there is disposed fusible material 13, having end pieces 14, preferably secured thereto in such a manner as by casting, and composed of a material less susceptible to the action of heat. These end members 14 are provided at their outer ends with tips or projections 15. The ends of the chain links 10 which protrude through the opening 11 are adapted to be positioned over the projections 15 and to engage the fusible material between the two links. The end pieces 14 are thus spaced apart by the fusible material 13, and are preferably disposed at a slight angle to each other, the fusible material 13 being exposed to the action of heat or to the atmosphere on all sides. This is a feature of importance, for the reason that if the fusible material is disposed between or is covered by another material less susceptible to the heat, the other material must first be heated through before the fusible material is subjected to the melting degree of heat. By having the fusible material exposed on all sides to the atmosphere the action of the heat is positive and sure, and does not depend for its transmission on other conductors of heat. It will also be noted that with this construction the fusible material 13 is under compression when the fusible link is in position; for when tension is exerted upon the chain links (see Fig. 1) they act as levers with the edges of the aperture 11 as fulcrums, and tend to compress the fusible material between the end pieces 14.

An application of my invention is shown in Fig. 4, in which a window sash 16 is movable in a frame 17 with counter weights 18 for balancing the window. The window is preferably of fire proof construction, and has grooves in the sides and at the bottom of the frame to receive a chain 19, which is suitably connected to the weights 18. In the outer face of the window sash, preferably adjacent the lower edge of the sash and communicating with the groove in the lower edge, is an opening through which the links of the chain 19 may protrude to engage and hold in compression between them fusible material 13, with end pieces 14, similar to that shown in Fig. 1. When the window is raised and the fusible material is subjected to a fusing degree of heat,

it melts, thereby permitting the links of the chain 19 to be drawn through the opening in the window sash, and thereby releasing the balancing weights 18, causing the window 16 to fall.

It is sometimes desirable to include a device such as I have described in a single tension chain, and for this purpose the construction of my device may be slightly varied, as shown by Figs. 5 and 6, in which the apertured plate 20 is reduced in size, it being necessary only to provide a structure of sufficient strength to endure the strain placed upon it. In all other respects it may be similar in construction to the form already described. In the above mentioned figures a chain link 21 is shown, which permits the ready removal or adjustment of the fusible link. The operation of this form is similar to that already described, and as soon as the fusible material 13 is melted, either one or both of the links 10 are drawn through the apertured plate 20, thus releasing the tension and breaking the chain.

I claim:

1. In a fusible link, the combination with fusible material, of end pieces between which the said material is disposed and to which it is secured, an apertured member, and means extending through the member and positioned by the end pieces, whereby when the link is in tension the said material is under compression.

2. In a fusible link, the combination with material fusible at a predetermined degree of heat of end pieces secured thereto with outwardly projecting tips, an apertured member, and links disposed over the said tips and extending through the aperture, the said links being fastened from the side of the member opposite to that of the fusible material, to the members which the fusible link is to connect.

3. In a fusible link, the combination with an apertured member, of material susceptible to heat, disposed on one side thereof, end-pieces less susceptible to heat secured to the material, spaced apart thereby and having outward projections and links for chain fastenings engaging said projections and extending through the said aperture, the projecting ends of the said chain-links having connection on the other side of the apertured member with tension members, whereby when the material is melted the end members will be drawn toward each other and the said links will be drawn through the said aperture.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 19th day of August A. D. 1911.

JOSEPH ALSFASSER.

Witnesses:

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K. W. WONNELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."