May 24, 1955 H. L. HAVEN 2,708,784

TENTER CLIP

Filed Dec. 6, 1951

Fig. 1

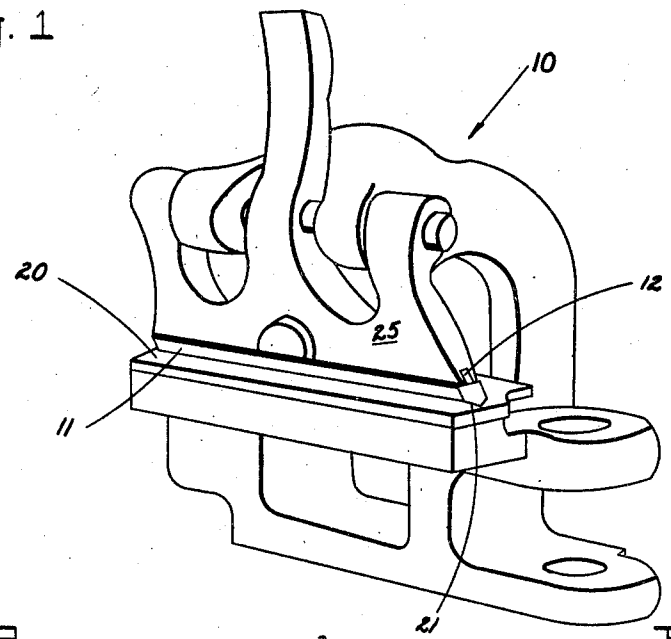


Fig. 2

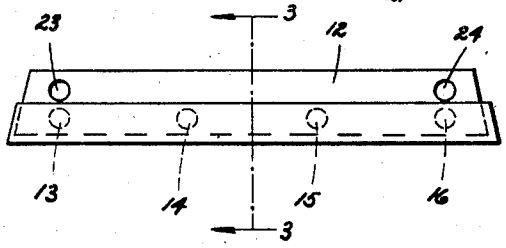


Fig. 3

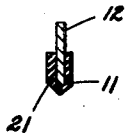
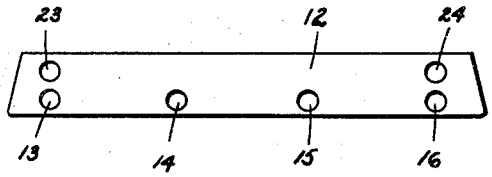


Fig. 4



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2,708,784

TENTER CLIP

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6 Claims. (Cl. 26—62)

This invention relates to tenter clip gates and more particularly to the edge of the gate and thereby the type of gripping action.

One of the objects of the present invention is to provide a gate edge which will not groove the plate after a normal period of wear, nor stick to or wedge to the plate.

Another object of the present invention is to provide a gate edge which will not cut, nor iron fabrics or leave a discoloration in the fabric nor damage the fabric when the gate is employed on gauze, ninon, marquisette, matelasse, loosely woven fabrics or very sheer fabrics made of natural or synthetic fibers.

Still another object of the present invention is to provide a gate with an edge which can withstand the high operating temperatures of the tenter frame and still present a firm but tender gripping surface.

And still another object of the present invention is to provide a uniform gripping action between the gate and plate regardless of the speed of the machine.

And still another object of the present invention is to provide a uniform gripping action between the gate and plate regardless of the thickness of the material to be gripped and without the necessity of adjustment between the gate and plate.

And still another object of the present invention is to increase the speed of production of tenter frames by providing improved gripping means between the gate and the plate.

Other objects of the present invention will be pointed out in part and become apparent in part in the following specification and claims.

In the past tenter clip gates have been constructed of ferrous and non-ferrous material. This was due in part to the high temperatures encountered in normal operating tenter frame operation and also to the fact that enormous pressures are exerted on the gripping element. In seeking to remove the harsh effects of the gripping element on the cloth or fabric all kinds of mechanical expediencies have been resorted to, from the use of soft metals to reducing the gate edge to a fraction of the original gate area. All these means have failed to eliminate cutting, tearing, ironing and discoloring of the cloth and the wedging of the gate to the plate with its consequent undue wear.

The present invention overcomes these undesirable features of the gripping element inherent in tenter clips since their inception more than a hundred years ago. This long needed improvement is embodied in the novel form and structure shown in the accompanying drawing wherein like reference numerals refer to like parts.

Figure 1 is a perspective view of a tenter clip embodying the new and improved tenter clip gate.

Figure 2 is a side elevational view of the tenter clip gate edge.

Figure 3 is a sectional view of the gate edge taken along line 3—3 of Figure 2 looking in the direction of the arrows.

Figure 4 is a side elevational view of a detail part of the gate edge.

In the past attempts have failed when non-metallic substances have been fastened to a gate edge. This was due in part to the great strain placed on the fastening elements. The present invention contemplates a silicon covering or shoe **11** molded to the metallic gate edge **12**. In order to insure the unitary action so necessary between the gate edge and the gate, passageways **13**, **14**, **15** and **16** are provided permitting the silicon to bind to an enlarged area of the blade. Passageways **13**, **14**, **15** and **16** in effect provide self contained rivets in the silicon covering or shoe **11**. Thereby permitting a yielding action in the covering or shoe **11** while said covering remains an integral part of gate edge **12**. The yielding action is due to the resilient quality of the silicon material.

The shape of covering or shoe **11** can be of any geometric form found to be best suited to the particular type of fabric or cloth to be gripped between covering or shoe **11** and plate **20**. It is shown as consisting of a V shape **21**.

Holes **23** and **24** are conventional to a gate edge and are used to secure gate edge **12** to gate body **25** in the conventional way.

In operation the tenter clip **10** as a unit of a conventional tentering machine chain, will pass through areas from room temperature to temperatures of 400° F. carrying cloth to be processed between covering or shoe **11** and plate **20**. The cloth will exert a strong pulling action to slip from between covering or shoe **11** and plate **20**. Covering **11** must therefore prevent the cloth from pulling free while at the same time prevent damage to the cloth at the area where the covering **11** binds the cloth to plate **20**.

While experimentation has shown silicon in an amorphous state to be satisfactory, any non-metallic substance which can withstand four hundred degrees of heat and be fastened to a tenter clip gate and possesses a resilient quality comes within the spirit and scope of the present invention.

While there are above disclosed but a limited number of embodiments of the structure, process and product of the invention herein presented, it is possible to produce still other embodiments without departing from the inventive concept herein disclosed, and it is desired therefore that only such limitations be imposed on the appended claims as are stated therein.

What I claim is:

1. A tenter clip having a plate and a cooperative hinged gate, a metallic edge having passageways secured in said gate, a non-metallic substance molded to five edges of the metallic edge of the gate and forming self-contained rivets through the medium of passageways in the gate edge.

2. A tenter clip having a plate and a cooperative hinged gate, a gate edge in said gate provided with passageways, a silicon covering molded to the gate edge and providing self-contained rivets within said covering secured in said passageways, said silicon covering having a V-shaped edge adapted to yieldingly engage the plate in said tenter clip.

3. A tenter clip having a gate and a plate, a metallic edge secured to said gate provided with passageways and a silicon covering secured to said gate by means of adhering to the side of said metallic edge and through a gripping action of said covering in said passageways, said silicon covering having a V-shaped edge adapted to yieldingly engage said plate.

4. A tenter clip having a gate and a plate, a metallic edge secured to said gate provided with passageways and a non-metallic covering secured to said gate by means

of adhering to the sides, edges and bottom of said metallic edge and through a gripping action of said covering in said passageways, said non-metallic covering having a V-shaped edge adapted to yieldingly engage said plate.

5. A tenter clip having a plate and a cooperative hinged gate provided with a removable blade having a covering shoe for cooperation with said plate for gripping cloth, said shoe being of silicon and molded about a portion of said blade, interconnecting means between said blade and said shoe which comprise integral portions of the shoe passing through said interconnecting means in the blade.

6. A tenter clip having a plate and a cooperative hinged gate provided with a blade portion having a covering shoe for cooperation with said plate for gripping cloth, said shoe being of resilient material molded about a portion of said blade portion, said blade portion having apertures therein, said shoe comprising integral portions passing through said apertures to yieldingly hold said shoe to said blade portion.

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