May 14, 1940. L. SLAGBOOM 2,201,000

TENTERING CLIP

Filed Aug. 8, 1939 2 Sheets-Sheet 1

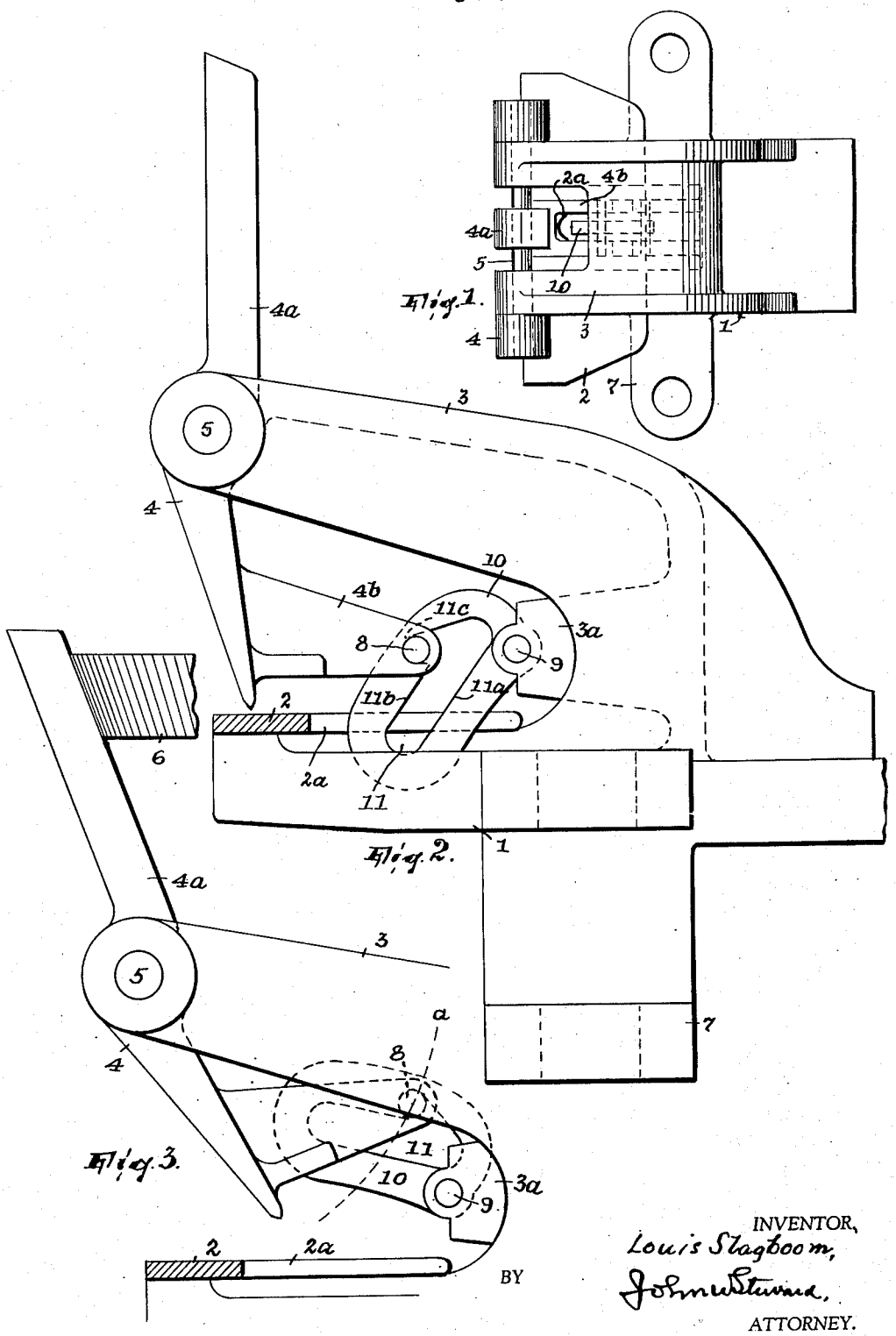


Fig. 1.

Fig. 2.

Fig. 3.

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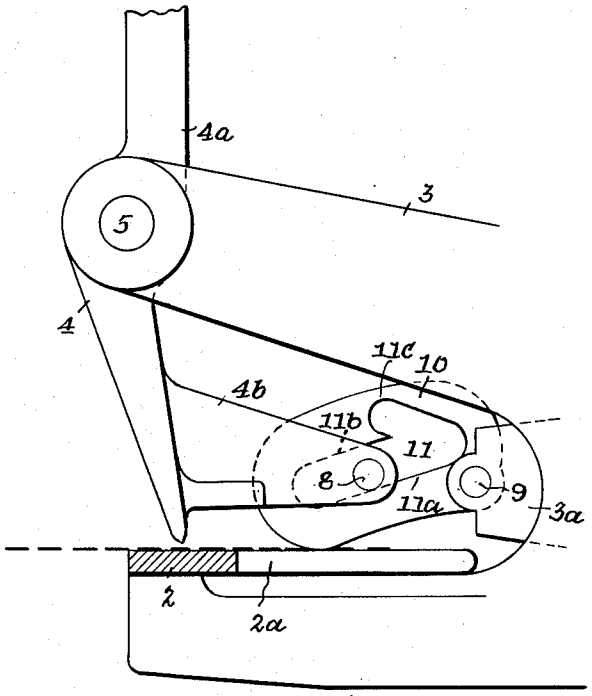


Fig. 4.

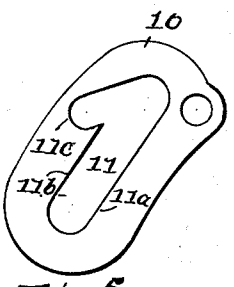


Fig. 5.

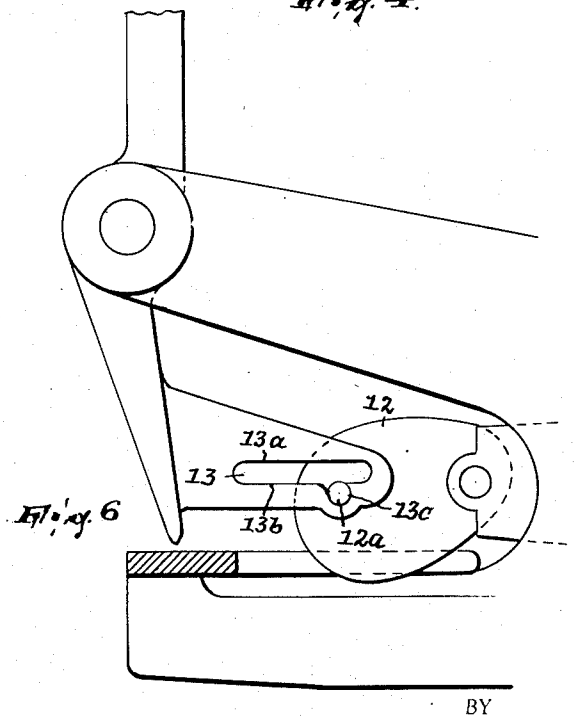


Fig. 6

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Patented May 14, 1940 2,201,000

UNITED STATES PATENT OFFICE

2,201,000

TENTERING CLIP

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Application August 8, 1939, Serial No. 288,925

1 Claim. (Cl. 26—62)

This invention relates to tentering clips. Such a device is frequently equipped with a feeler, to wit, a member, usually pivoted, which controls the movable jaw of the clip in its downward or closing movement if cloth overlies a slot or aperture under the feeler and thus serves to cause the gripping of the cloth by the clip to be effected substantially at its very edge. It is known that when the movable jaw is allowed to close without cloth being present, to wit, during travel of the clip in the outer stretch of the chain of which it forms a part or link, or it may be during its travel in the inner stretch if the tentering machine is being operated without introduction of cloth, the gripping edge of such jaw and the portion of the surface of the fixed jaw of the clip which coacts therewith become worn and require frequent attention to keep them in proper working order. According to this invention the clip itself embodies means which prevents closing of the movable jaw against the fixed jaw in the absence of cloth between them. Further, the clip is so constructed to this end that practice has shown that it is substantially infallible.

In the drawings:

Fig. 1 is a plan of the improved clip;

Fig. 2 is a side elevation, showing cloth absent and the movable jaw held against contact with the fixed jaw, plate 2 of the latter appearing in section;

Fig. 3 is a similar but fragmentary view, showing the movable jaw held fully open;

Fig. 4 is also a similar view, showing cloth under and supporting the feeler and the latter supporting the movable jaw against contact with the cloth until the clip retracts and thereupon the cloth frees the feeler;

Fig. 5 is a side elevation of the feeler shown in Figs. 1 to 4; and

Fig. 6 is a view, similar to Fig. 2, of a modified form of the clip.

Except as will be noted, the following parts are or may be all the same as in a standard type of clip: The fixed structure comprising, with a base 1 and plate 2 thereon on which the cloth rests, the fork 3 overhanging the plate, which latter is apertured, as slotted, at 2*a*, in a direction crossing its outer or left-hand edge; the movable jaw 4 pivoted on the horizontal pin 5 above the plate and in crossing relation to the slot, it having its lower end portion a more or less sharpened blade to coact with the plate to grip the cloth and also having an upstanding arm 4*a* to be engaged by a suitable opener, as 6, Fig. 3, of the machine to open the clip, as when it is to receive or free the cloth, and an arm 4*b* projecting inwardly; and the extensions 7 of the fixed structure by which the clip is pivotally connected with adjoining clips to form an endless chain. The movable jaw may be caused to close in any way, as by gravity.

According to my invention, as shown by Figs. 1 to 5, the free end of arm 4*b* is forked, such fork being traversed by a pin 8 parallel with the axis of the movable jaw. At 9 is a pivot pin also parallel with said axis and mounted in a projection 3*a* of the fork 3. On this pin 9 is pivoted a feeler 10 which is here a metal plate of oval contour, its bearing hole being near one end and at one side of the longitudinal axis of the feeler. This feeler is confined by the pivot at 9 to arcuate movement, by which I mean substantially only arcuate movement. It is received by the fork of arm 4*b* and is in the same plane as the slot 2*a*, wherefore it may enter the slot when it turns anti-clockwise. Its relatively free end is rounded, as usual, wherefore, as usual, to aid in opposing closing of the movable jaw on the cloth except substantially at the very edge of the latter.

This feeler has a slot 11 which extends generally away from the pivot 9 and which receives the pin 8. What appears as the relatively lower side 11*a* of the slot is plain or without diversion. The opposite side of the slot is substantially plain and parallel to the side 11*a*, as at 11*b*, from the end thereof adjoining the free end of the feeler to a point more or less near its other end where it is diverted in a direction away from the side 11*a* to form a recess, as at 11*c*. This recess is so disposed that when the feeler has fallen to occupy the slot 2*a* (Fig. 2) such recess exists providing a detent shoulder in the path of movement *a*, Fig. 3, of the pin 8.

The operation of the clip thus described is as follows:

Assume that the movable jaw and feeler members are in the positions of Fig. 3, they being so held by the opener 6, and that when the clip moves away from the opener cloth is not entered between the feeler and plate 2. When said members thus fall without the feeler member being checked by the cloth the mentioned shoulder of recess 11*c* stands in the path *a* of pin 8, thus checking the jaw member before it contacts with the plate 2. But if cloth is present under the feeler, as in Fig. 4, such feeler is checked before said detent shoulder of its recess 11*c* attains crossing relation to said path, wherefore the pin 8 can enter the left-hand end of the slot and so the jaw member can ultimately assume fully

closed position. On entering such portion of the slot pin 8 bears on the surface 11*a* and as the clip now is caused to move away from the opposite clip (with consequent retraction of the cloth from between the feeler and plate) and the feeler gradually descends the jaw member is prevented from falling on the cloth until it can do so only substantially at its very edge.

In Fig. 6 a modification is shown in which the relative positions of the pin and slot are reversed. That is to say, here the slot 13 is in the arm 4*b* of the movable jaw member 4 and the pin 12*a* is a part of the feeler, here designated 12. The surfaces 13*a*, 13*b* and 13*c* of the slot respectively correspond to the surfaces 11*a*, 11*b* and 11*c* of the slot of the feeler first described. The operation, it will be obvious, is here essentially the same as that already described.

It has been proposed (Peterson Patent No. 1,907,090) to accomplish the purposes aimed at by the present invention by providing a feeler which is shiftable transversely of its pivoting axis and forming in the feeler a slot which is generally of re-bent form. Such a construction contemplates preventing the movable jaw from closing on the plate in absence of cloth and it is of course effective to that end. But due to the ability of the feeler to shift crosswise of its pivot and to the rebent form of the slot, practice has shown that a clip so devised is not by any means as infallibly proof against closing when cloth is absent as is that of my invention, where the feeler is confined to arcuate movement and the slot is coincident with a substantially straight line extending away from the pivot of the feeler.

In the appended claim I use the term "bearing" in reference to what is here merely a pin 8.

Having thus fully described my invention, what I claim is:

A tenter clip including fixed structure providing a space open laterally to receive the cloth and a horizontal cloth-supporting surface at the lower side of said space provided with an aperture, a depending jaw member pivoted in said structure above said surface on a horizontal axis and movable outwardly against cloth positioned on said surface and reversely, said structure having a fixed pivot parallel with said axis and above said surface and arranged inward of said member, and an up-and-down-movable feeler member confined by the pivot to a single arcuate path concentric with said pivot and arranged to enter and recede from said aperture, one member having a bearing whose axis is parallel with the first axis and arranged to stand in substantially the same horizontal plane as the pivot when the feeler member, supporting the jaw member, rests on the cloth overlying said aperture and the other member having a slot receiving the bearing and formed to extend approximately horizontally when the feeler member so rests on the cloth and one side of which for substantially the full extent of the slot is straight and the other side of which is the side against which the bearing bears when said members descend without cloth present under the feeler member and has a portion thereof which is displaced from each end of the slot diverted and forming a recess providing a detent shoulder for the bearing and the portion thereof which is relatively between the recess and the jaw member substantialy parallel for its full extent with the first-named slide.

LOUIS SLAGBOOM.