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CLOTH CLAMP

Filed April 11, 1930

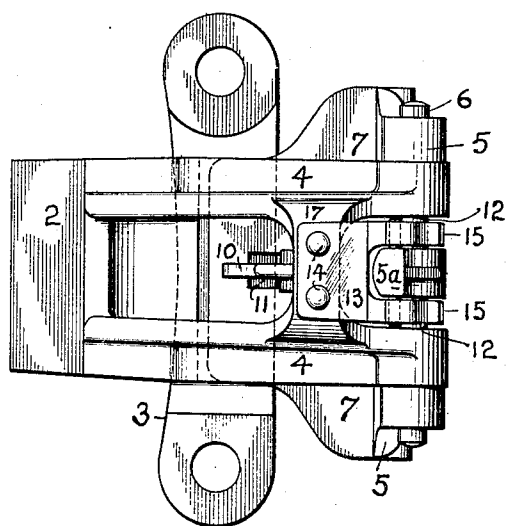
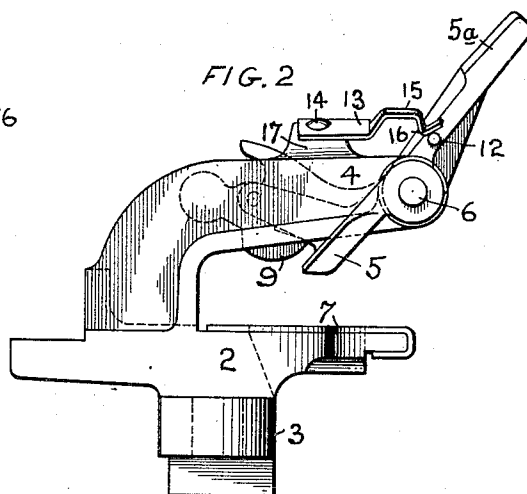
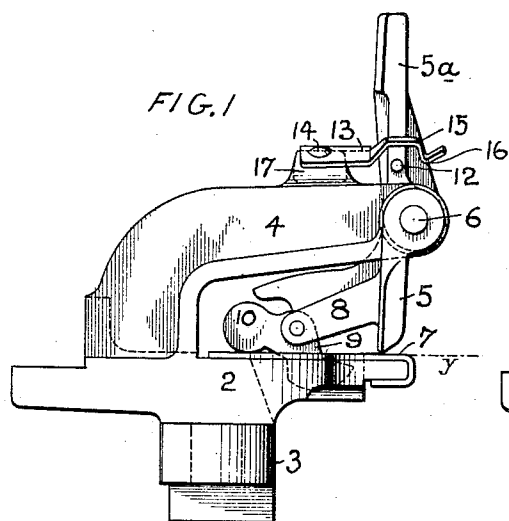
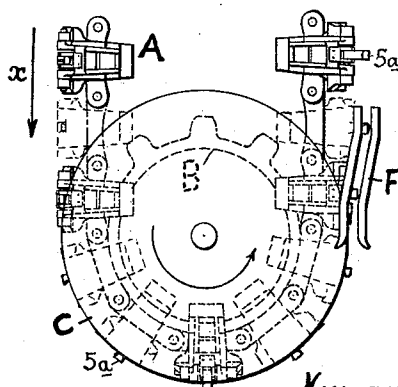
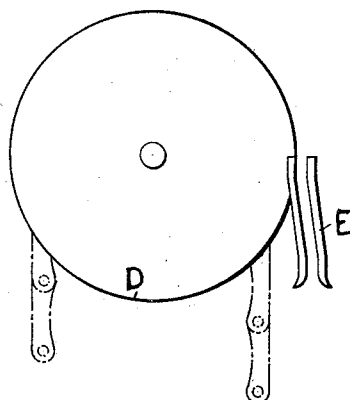
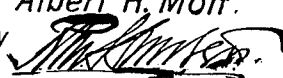


FIG. 4



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CLOTH CLAMP

Application filed April 11, 1930. Serial No. 443,230.

Heretofore it has been customary to construct cloth clamps, such as employed on tentering machinery and for other textile uses, in such manner that the cloth clamps were connected end-to-end in chain-like arrangement and each clamp comprising a fixed jaw and a pivoted jaw between which the selvage of the fabric is grasped or nipped and in addition thereto a controlling pawl so pivoted that when supported upon the fabric it held the pivoted jaw out of engagement with the fabric and when released by the adjustment of the fabric, the pivoted jaw was adapted to fall by gravity and nip the selvage of the fabric.

In clamps of this character the pivoted jaw was so weighted that when released from the action of cams or positively operating means, the nipping edge of the pivoted jaw would gravitate into contact with the fixed jaw with the result that in travelling through the tentering machine during return movements or when not in contact with the fabric, such nipping edge would, under the vibration of the machine, cause undue wear and ultimately cause such edge to become rounded instead of retaining its angular form in cross section and as a result fail to positively grip the fabric, especially so in the case of the more delicate fabrics.

It is the object of our invention to overcome the above objections by so constructing the cloth clamp and its operated mechanism that when the pivoted jaw is in gripping relation with the cloth, it operates as formerly but when it is required to travel through the machine such as returning from the delivery end to the intake or feeding end, said pivoted jaw is mechanically thrown into an open position and temporarily locked in this condition out of contact with the fixed jaw during the return travel of the clamp through the machine.

In this manner the pivoted jaw is prevented from beating or hammering upon the fixed jaw thereby preserving the sharpness of the gripping edge and in addition thereto, the pivot pin of the movable jaw is likewise freed from excessive wear thereby increasing the life of the clamp and also re-

ducing the amount of repairs necessary to keep the clamp in good commercial operative condition.

Our invention also comprehends additional features of construction which together with those above enumerated, are more fully described hereinafter and pointed out in the claims.

Referring to the drawing, Fig. 1 is a side elevation of a cloth clamp embodying our improvements with the fabric in position to sustain the gripping jaw out of gripping relation with the fixed jaw; Fig. 2 is a similar view with the pivoted jaw moved to maximum open adjustment and locked in said open position; Fig. 3 is a plan view of our improved cloth clamp having the parts in position as shown in Fig. 1; and Fig. 4 is a plan view showing our improved cloth clamp in combination with operative cam portions forming a part of the machine.

A represents an endless chain of cloth clamps of the general character of those shown in Figs. 1, 2 and 3, each having a fixed jaw 7 and a pivoted or movable jaw 5, between which the fabric *y* (Fig. 1) is gripped while being fed through the tentering or other machine in which our improved cloth clamps are employed. The movable jaws 5 of the clamps are each provided with an operating arm 5a adapted to be actuated by the cams C and D, the former arranged to open the movable jaw 5 to release the fabric and the latter to temporarily suspend clamping action by the pivoted jaw during the period the cloth is being fed into the clamps, it being understood that the cloth clamps and fabric travel in the direction of the arrow *x* (Fig. 4). The endless chain of clamps A are driven by the sprocket wheel B and the parts A, B, C and D being all carried upon a suitable frame (not shown) preferably reciprocating or normally stationary as desired.

Referring now to the specific features of the cloth clamp shown in Figs. 1, 2 and 3, 2 is the main body having the clamping face 7 and provided with the link-like structure 3 adapted to be connected with similar cloth clamps to constitute the chain indicated in

Fig. 4. The body part 2 is provided with overhanging brackets 4 which are connected at their free ends by a bridge piece 17. 5 represents the pivoted jaw of the clamp and is hinged to the free ends of the brackets 4 by a pin 6 about the axis of which the pivoted jaw swings. The upper end of the jaw 5 is provided with a projecting operative arm 5a which is adapted to be brought into contact with the cam portions C and D and also for operation in conjunction with the cam portions E and F. The pivoted jaw 5 may be provided with a rearwardly extending arm 8 on which is pivoted a cloth control pawl 9 having a rear extension 10, said pawl resting at its forward end upon the cloth which may extend between the stationary and pivoted jaws, whereas the rear end 10 of the pawl is supported upon the table portion of the stationary jaw.

In this manner, the cloth upon which the pawl 9 rests will hold the pivoted jaw 5 out of gripping relation until the gradual shifting of the cloth releases the pawl and permits the jaw to grip the same near the selvage thereof. The table portion of the body 2 is provided with a slot 11 into which the control pawl 9 extends when released.

In Fig. 1, the pawl is shown as released and the pivoted jaw 5 has been permitted to move into gripping relation with the fixed jaw which jointly cooperate to grip the fabric as shown.

During the time that the cloth is being operated upon and while travelling in the direction indicated by the arrow *x* in Fig. 4, the pivoted jaws of the clamps are alone under the control of the pawl 9 and the fabric. During the return movement of the chain of clamps, namely, while passing from the cam F to the cam E in Fig. 4, the pivoted jaws are free to contact with the fixed jaw if not otherwise prevented, and such contacting under the normal operation of the machine would produce considerable vibration and hence friction between the stationary and pivoted jaws causing undue wear and otherwise injuring the gripping edge to an objectionable extent, sometimes producing edges which are apt to cut the fabric when delicate of texture.

My improvement, now to be described, is useful in automatically causing the pivoted jaws of the clamps to be moved out of contact with the fixed jaws and sustained out of contact during the return movement and until it is again put into action to grip the selvage of the fabric.

The operating arm 5a of the pivoted jaw 5 is provided with a lateral pin 12, the said pin preferably extending to opposite sides of said arm as indicated in Fig. 3. 13 is a sheet metal spring, secured in position upon the bridging piece 17 of the brackets or arms 4 by means of rivets or other suitable

means 14, the said spring plate 13 being provided with extending spring arms 15 arranged upon opposite sides of the operating arm 5a of the pivoted jaw as will be more readily understood by reference to Fig. 3. The free ends 16 of the spring arms 15 are bent with a rounded nose-like structure which cooperates with the transverse pin structure 12 of the pivoted arms 5a of the pivoted jaw. The spring arms 15 are so shaped that, for normal operations of the pivoted jaw in receiving and gripping the fabric, and in the conveying of the fabric through the machine, the transverse pin 12 of the said arm 5a is free to be moved with the gripping jaw during its normal operation without contact with the spring arms 15 aforesaid.

As before stated, the gripping relation of the jaws with the selvage of the fabric *y* shown in Fig. 1, is normal during the treatment of stretching and feeding and the transverse pin 12 during that time is entirely out of contact with the spring arms 15. However after the gripping jaw 5 has released the fabric under the automatic action of the cam C upon the arm 5a, the return travel of the cloth clamps causes the said arms of the successive gripping jaws 5 to be given an additional movement by the cam F with the result that the ends of the transverse pin 12 are forced under the latching ends 16 of the spring arms 15, all as shown in Fig. 2. This adjustment of the parts is maintained throughout the return movement and until the arms 5a are successively pushed inwardly by the releasing cam E (Fig. 4) and disengaged from the said spring arms 15. In so doing the gripping jaws 5 are once again permitted to have free play to grip the selvage edge of the fabric web as shown in Fig. 1.

From this it will be understood that during the return travel of the cloth clamps, the gripping jaw 5 is raised to the highest position possible and locked thereat as indicated in Fig. 2, which, as is manifest, holds the gripping edge of the jaw 5 out of contact with the fixed gripping jaw 7 thus preserving it against mutilation or injury such as would occur by incessant vibration of the jaw 5 upon the jaw 7 due to the jarring of the chain of cloth clamps during their return movement through the machine.

It will be understood that while we have shown the spring 13 as provided with double fingers 15 engaging oppositely directed ends of the transverse pin 12 for retaining the gripping jaw out of gripping position, we do not restrict ourselves in this respect as the same general result will be secured by a spring having only one spring finger. Furthermore, we do not restrict ourselves to any particular specific form of latching or retaining device for temporarily locking the pivoted jaw out of gripping relation with the

fixed jaw at times when out of gripping relation with the fabric and therefore our improvements include any suitable means which will accomplish these results.

5 Furthermore, we do not restrict ourselves to any particular controlling pawl means for retaining the gripping jaw out of gripping relation with the fabric and controlling the time of its nipping the selvage of the fabric, as any of the devices heretofore employed for
10 that purpose may be incorporated in the cloth clamp as a whole in view of the particular pawl mechanism shown.

It will now be apparent that we have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while we have in the present instance shown and described the preferred embodiment thereof which has
15 been found in practice to give satisfactory and reliable results, it is to be understood that we do not restrict ourselves to the details as the same are susceptible of modification in various particulars, without departing from the spirit or scope of the invention.
25 the spirit or scope of the invention.

We claim:

1. A cloth clamp for textile machines having a fixed jaw, a pivoted jaw loosely hinged thereto so as to be normally free to move
30 automatically into gripping relation with the fixed jaw under the action of gravity, and controlling means operable by the cloth for holding the pivoted jaw out of gripping action with the fixed jaw but which releases the pivoted jaw whereby it may grip the
35 cloth adjacent to its selvage, in combination with a spring actuated retaining member secured to one of the jaws for temporarily engaging the other jaw when it is temporarily out of gripping relation, and holding it temporarily out of gripping relation, the retaining member normally free from an engaging contact with the other jaw when it is in gripping action, but arranged to temporarily hold
40 said engaged jaw out of gripping action when given a movement in excess of the normal gripping movement required.

2. A cloth clamp having a fixed jaw, a pivoted jaw loosely hinged thereto so as to be
50 normally free to move automatically into gripping relation with the fixed jaw under the action of gravity, controlling means operable by the cloth for holding the pivoted jaw out of gripping action with the fixed jaw
55 but which releases the pivoted jaw whereby it may grip the cloth adjacent to its selvage, and a spring actuated retaining means for holding the pivoted jaw out of gripping relation with the fixed jaw when said pivoted
60 jaw is fully raised, said retaining means comprising a spring secured to one of the jaws, and means movable with the other jaw and normally during gripping action out of working contact with the spring so as to be gravity
65 actuated during gripping relation of the jaws

but adapted to be brought into contact therewith when the pivoted jaw is given a movement in excess of the normal gripping movement required for sustaining the pivoted jaw out of contact with the fixed jaw.

In testimony of which invention, we hereunto set our hands.

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ALBERT H. MOLT.

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