J. J. HOEY.

TENTER CLIP.

APPLICATION FILED DEC. 2, 1915.

1,273,610. Patented July 23, 1918.

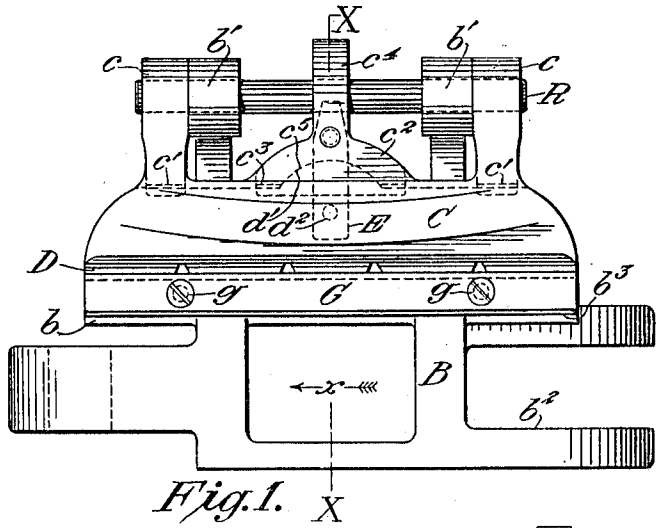


Fig. 1.

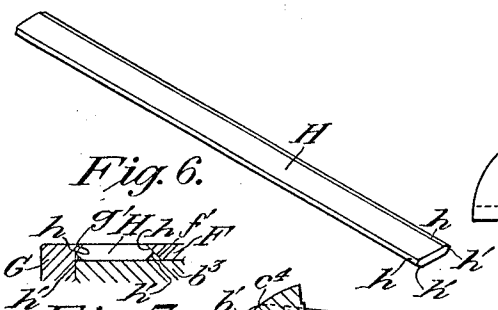


Fig. 6.

Fig. 7.

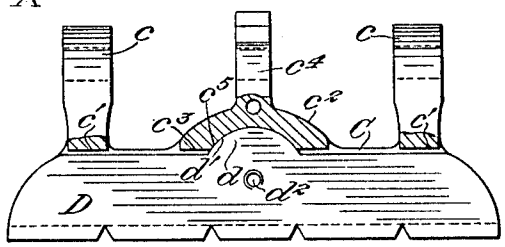


Fig. 4.

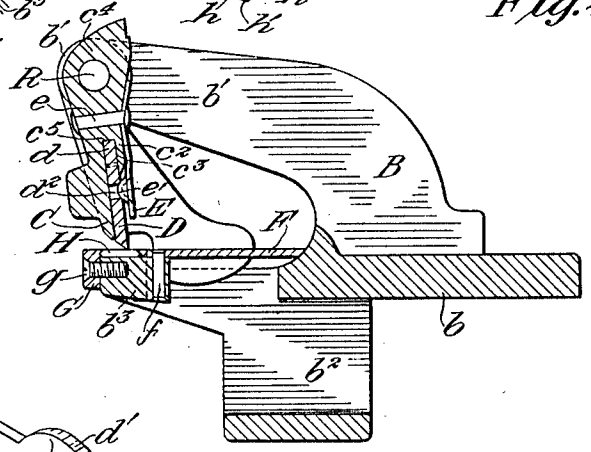


Fig. 2.

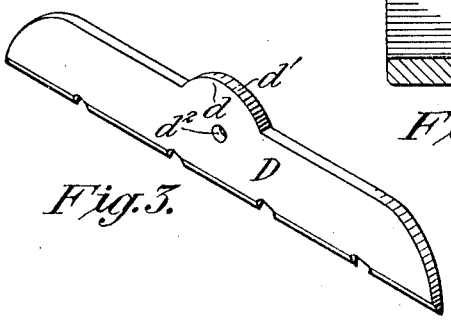


Fig. 3.

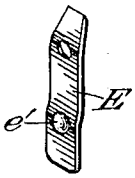


Fig. 5.

INVENTOR

John J. Hoey

By Arthur P. Arrington

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN J. HOEY, OF PROVIDENCE, RHODE ISLAND.

TENTER-CLIP.

1,273,610. Specification of Letters Patent. Patented July 23, 1918.

Application filed December 2, 1915. Serial No. 64,764.

To all whom it may concern:

Be it known that I, JOHN J. HOEY, a citizen of the United States, residing at Providence, in the county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Tenter-Clips, of which the following is a specification.

My invention relates to tenter-clips or cloth-clamps for use on tentering-machines employed in finishing textile materials and consists of improvements in the construction and arrangement of the clamping jaws thereof. The object of my improvement is to provide the clip with a self-adjusting working-blade on the movable jaw arranged to be easily removed for sharpening or replacement, and a detachable surface-plate on the fixed jaw adapted to be reversed in position to give longer wear and to be replaced at slight expense.

The manner and means for carrying out my improvements are fully described in the following specification, illustrated by the accompanying drawings, in which like reference characters designate like parts. In the drawings:—

Figure 1 is a front elevation of my improved tenter-clip;

Fig. 2, a sectional view of the same taken on the line X—X of Fig. 1, looking in the direction indicated by the arrow x;

Fig. 3, a perspective view of the self-adjusting, removable work-blade for the swinging clamp-jaw;

Fig. 4, a part-sectional elevation of the swinging jaw showing the means for adjustably mounting the work-blade thereon;

Fig. 5, a perspective view of the spring-clip or detent for the swinging-jaw blade;

Fig. 6, a view in perspective of the reversible face-plate for the fixed jaw; and

Fig. 7, an enlarged, cross-sectional view through the fixed jaw of the clip, illustrating the method of securing the face-plate thereon.

Referring to Figs. 1 and 2, B designates the main frame of the clip which is formed with a base b and two upstanding, overhanging arms b', b'. The lower portion of the base b of the clip is constructed as a link b^2 adapted to be coupled to adjacent links to form an endless chain which travels on sprockets at the ends of the tenter-frame. At the forward end of the base b is a horizontal ledge b^3 serving as the fixed jaw of the clip and on which the cloth rests to be clamped thereto at its selvage. Extending through the ends of the overhanging arms b', b' is a rod or hinge-pin R on which is pivoted the swinging jaw-member C. The jaw C is usually constructed with a lower hoe-like blade-portion formed with ears c, c at its top bored to receive the ends of the hinge-pin R which support it pendant therefrom to adapt its lower edge to coöperate with the upper face of the fixed jaw of the clip. Usually the jaw C is ground off on a bevel to sharpen its edge so that it will "bite" on the fabric and, as shown in Fig. 2, the jaw is hung in such position that the pull on the cloth causes it to operate with a dogging-action to clamp the selvage against the fixed jaw. Heretofore it has been the usual practice to form the sharpened edge directly on the jaw C, but in grinding down the edge it is difficult to make it aline properly with the face of the fixed jaw to provide an accurate engagement between the two. The working edge of the swinging jaw soon becomes dulled from constant use, especially when operating on hard fabrics, and it is necessary to remove it frequently for regrinding and in some cases for replacement with a new jaw. In my present improvement I propose to construct the swinging jaw C with a removable working-blade which may be readily detached therefrom for regrinding its edge and which is mounted on the jaw to adapt it for self-adjustment to allow it to properly aline its operating edge with the face of the fixed jaw when the two are brought into engagement with the cloth.

Referring to Figs. 2 and 4, the movable jaw C takes the same conventional form as heretofore except that its lower edge is cut away to clear the upper face of the fixed jaw instead of being sharpened to bear thereagainst. Fastened to the rear side of the jaw C is the self-adjusting work-blade D, shown in detail in Fig. 3, preferably constructed of sheet-metal, hardened and sharpened on its lower edge. Usually the blade D is ground off on a bevel to sharpen its lower edge and in some instances a series of V-shaped cuts are made in the edge to divide it into teeth as shown in Figs. 3 and 4. The top of the blade D fits into slots c', c' cut up into the raised portions of the ears c, c of the jaw-member C, see Figs. 1 and 2, and at the center of the jaw C is a crown-like enlargement c^2 also slotted at c^3

to receive the blade D. Extending upwardly from the enlargement c^2 is a lug or arm c^4 corresponding to the ears c, c and likewise bored to receive the bearing-rod R. The slot c^3 in the enlargement c^2 is formed with a circular milling-cutter to provide a curved arch-like face c^5, see Fig. 4, which serves as the bearing for the blade D. Referring to Fig. 3, the blade D is provided at its top with a projection d, the upper rounded edge d' of which corresponds to the arched bearing face c^5 on the jaw C, see Fig. 4. A slight clearance is provided between the straight portions on the top of the blade D and the inner edges of the slots c', c', see Figs. 1 and 4. In this manner the projection d is made to serve as a rocker bearing for the blade D so that the latter is free to rock slightly on a transverse axis located at the center of the radii of its curved edge d'. On the back of the arm c^4 is a spring-clip or detent E for the blade D, shown in detail in Fig. 5, preferably formed of sheet-metal and held in place by a rivet e. Adjacent its lower end the clip E is stamped out with a convex protuberance or semi-spherical enlargement e' adapted to yieldingly engage the beveled edge of a small hole d^2 in the blade D. The hole d^2 is located at the center of the radii of the curved edge d' of the projection d so as to allow for the rocking movement of the blade without disturbing the engagement of the clip therewith. The clip E therefore acts to hold the blade D in position on the jaw C without interfering with its rocking motion. It is to be understood, however, that the clip itself does not act as a pivot for the blade D, but on the contrary the arched surface c^3 on the jaw C and the curved edge d' of the blade provide the rocker-bearing to take the upward thrust of the blade. The clip E merely serves as a detent to hold the blade in place in its slotted bearings and when it is required to remove it for repair or replacement it is only necessary to spring the projection e' out from the hole d^2 and the blade can then be withdrawn from the jaw C.

Referring now to the main frame of the clip, as shown in Fig. 2 a flat sheet-metal plate F is riveted to the top of the base b and overlaps the front ledge b^3 to which it is secured by rivets f. On its front edge the plate F is formed with an undercut bevel surface f', as shown most clearly in the enlarged view, Fig. 7. Secured to the front of the ledge b^3 by means of the screws g is a clamping-bar G also formed with an inner, overhanging beveled surface g'. Seated on the top of the ledge b^3 is the sheet-metal surface-plate H, shown in detail in Fig. 6. Both longitudinal edges of the plate H are formed with opposite bevels h and h', or in other words, the sides of the plate are beveled off at opposite angles to form V-shaped knife-like edges. Referring to Fig. 7, the beveled edges of the plate D are adapted to underlie the bevels on the plate F and bar G when the plate is set flat on the top of the ledge b^3. In this manner the plate H is tightly clamped to the clip by tightening the bar G against the ledge b^3. By loosening the screws g the plate H may be released to allow for its removal from the clip for repair or replacement. It will be noted from Fig. 2 that the sharpened edge of the work-blade D on jaw C engages the face of the plate H on a line slightly to one side of its center, that is to say, "off center." This provides that when the plate H becomes marred or a groove is worn in its surface through the contact therewith of the sharpened edge of the blade D the plate may be reversed in position to provide a new bearing surface. In other words, the plate may be removed and turned completely around so that the jaw-blade D will bear on it at a point on the opposite side of its center. When the blade D becomes worn at both bearing points on one of its sides it may be taken out and turned over, and then again reversed in this position so that four bearing surfaces are made available to provide for the maximum wear. After the plate becomes badly worn on both of its faces it may be replaced at very little expense thus avoiding the necessity of discarding the whole clip.

It will be observed that my invention provides an improved tenter-clip having a self-adjusting clamping-jaw adapted to effect a firmer and more secure grip on the selvage of the fabric and also arranged for more convenient removal for sharpening its working edge. When the movable jaw swings into position to grip the fabric it automatically alines its gripping edge with the face of the fixed jaw so that the cloth will be held smoothly and evenly therebetween with a maximum clamping effect. The work-blade of the jaw being of sheet-metal, such as steel or bronze, it can be manufactured at relatively slight cost, besides adapting it to be hardened to provide for longer wear. When the blade of the jaw becomes too worn for further use it may be replaced at much less expense than if it were required to replace the whole jaw. In the same way my improvement also adapts the fixed jaw of the clip for longer wear, besides providing for its replacement at relatively slight expense. The reversible plate H being constructed of sheet-metal may be easily hardened and ground to a true surface, tending to reduce its cost of manufacture besides increasing its efficiency and durability. Heretofore, it has been necessary to throw away the whole frame of the clip when the fixed jaw became too badly worn for fur-

ther use, but with my present improvement the main parts of the clip are never worn out, but on the contrary may be used indefinitely.

Various modifications might be made in the construction and arrangement of the parts of my device without departing from the spirit or scope of the invention; therefore, without limiting myself to the exact embodiment shown, what I claim is:—

1. In a tenter-clip, the combination with a frame provided with a fixed jaw, of a movable jaw pivoted on the frame in pendant relation to the fixed jaw, a work-blade rockably mounted in a slot on the movable jaw to adapt it to oscillate on a central axis to aline its lower edge with the face of the fixed jaw, said blade formed with a depression coincident with its axis of oscillation, and a detent-clip formed with a projection adapted to engage the depression in the work-blade to hold the latter in position on the movable jaw without restricting its oscillating movement while allowing it to be removed therefrom for repair or replacement.

2. In a tenter-clip, the combination with a frame provided with a fixed jaw, of a movable jaw pivoted on the frame in pendant relation to the fixed jaw, a work-blade mounted in a slot in the movable jaw with its upper edge bearing against the top of the slot to adapt it to rock slightly to aline its lower edge with the face of the fixed jaw, and a spring detent-clip for maintaining the blade in position on the movable jaw while allowing it to oscillate in relation thereto.

3. In a tenter-clip, the combination with a frame having a fixed jaw, of a movable jaw hinged on the frame in pendant relation to the fixed jaw and formed with an arched bearing-face, a work-blade formed with a curved edge fitted to the arched bearing-face of the movable jaw to take the thrust of the blade thereagainst, and a detent-clip engaging the blade to maintain it in position on the movable jaw while allowing it to oscillate to aline its edge with the face of the fixed jaw.

4. In a tenter-clip, the combination with a frame formed with a horizontal ledge and overhanging bearings, of a relatively thin, flat face-plate mounted on the ledge, means to fasten said face-plate to the ledge to adapt it to be reversed in position side for side and top for bottom, and a movable jaw mounted in the bearings on the frame to adapt its lower working-edge to swing into engagement with the face-plate on a line at one side of the center of its face.

5. In a tenter-clip, the combination with a frame having a base and overhanging bearings, of a swinging jaw pivoted to said bearings, a face-plate formed with both of its longitudinal edges reversely beveled on opposite sides, and overhanging beveled shoulders on the base of the frame adapted to engage either set of bevels on the face-plate to secure the latter in position while allowing it to be removed to reverse it in position side for side and top for bottom.

6. In a tenter-clip, the combination with a frame formed with a horizontal ledge having an overhanging beveled shoulder, of a clamping-bar formed with a beveled shoulder arranged opposite to the shoulder on the ledge, a face-plate formed with beveled edges fitted to the shoulders on the ledge and clamping-bar, and means to adjust the clamping-bar on the ledge to secure the face-plate thereto while providing for its reversal in position in relation to the swinging jaw of the clip.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. HOEY.

Witnesses:
HERBERT K. ALLARD,
GEO. A. WHITE, JR.

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