This invention relates to an improved clamp and more particularly to a clamp of the type employed in the finishing of garments which have a vented portion requiring a closing of the vent during the garment finishing operation.

An object of my invention is to provide an improved garment vent clamp which has a secure gripping action, but which will not leave a mark or crease upon the fabric of the garment.

Another object is to provide an improved garment-vent clamp which has a self-adjusting floating jaw serving to give an improved clamping action upon an uneven fabric surface.

Another object is to provide an improved garment-vent clamp having its handles offset outwardly from the plane of suspension upon the garment to enable rapid insertion or removal of the clamp with respect to the garment.

A further object is to provide an improved garment-vent clamp which has a floating jaw guided by a frame which may be formed by a simple sheet metal stamping and which has a minimum of fastening parts.

Other objects and advantages will become apparent as the description proceeds and when considered in conjunction with the accompanying drawings showing a presently preferred clamp for use on vented garments being finished on the popular bag-type finisher.

In the drawings, Fig. 1 is an elevation view showing the clamp in position on a garment suspended on a bag-type finisher;

Fig. 2 is a side elevation view, with parts broken away and, in section, of the clamp in closed position and removed from the garment;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 2; and

Fig. 5 is a side elevation view of the clamp in opened position and removed from the garment.

In accordance with my invention, I provide a pair of frame members pivotally attached to each other, one of which carries an integral jaw for engagement with one side of the garment and the second of which carries a floating jaw for engagement with the other side of the garment. Each jaw carries a pad which contacts the garment surface and the jaws are adapted into clamping contact by means of a resilient member interposed between the frame members, one of which serves as a guide for the floating jaw. The entire clamp structure lies in the region outwardly of the plane of the integral jaw and thus permits the ready insertion or removal of the clamp with respect to the garment without interference with the bag upon which the garment is suspended.

As in the case of other clamps of this general type, the clamp is manually inserted into position on the garment and is manually removed therefrom after the finishing operation. Accordingly, the operator may find that the presence of bag 11, particularly when ballooned out under pressure, is an obstacle to rapid usage of the clamp, unless such clamp is constructed, as in my present invention, to permit manipulation of its frame portions without interfering contact with that bag.

As seen in Fig. 2, I provide a first frame member having a lower handle portion 20 preferably formed of sheet metal and having spaced laterally extending shoulders 21 and 22. This handle portion is positioned at a suitable acute angle, for example, 20°, with respect to the plane of an integral jaw member 23 extending upwardly from the handle portion and preferably having a reinforcing rib 19 longitudinally thereof. The jaw member preferably includes integral bent edges 24 and 25 (Fig. 3) for reception of a first clamping pad 26 which may be of a suitable material such as foam rubber adhesively secured on its rear side to the surface of jaw 23. The handle portion 20 preferably includes similar bent edges forming a channel-like recess at its lower end and in which the free lower end of a flat leaf compression spring 26 is adapted to slide and to be laterally confined.

Pivotedly attached to the shoulders of the first frame member as by a riveted pin 30 is a second frame member having a handle portion 31 and spaced shoulders 32 and 33 rotatable on the pinple. Above the pinple the second frame member is provided with an extension 29 for mounting the floating jaw at a central location thereof and with the shoulders 32 and 33 serving to engage and restrain from lateral movement the upper end of spring 26 which is anchored to the frame member as by a rivet 34.

The upper extremity of the extension of the second frame member conveniently comprises a bend hook 35 which loosely engages within two angular extensions 36 and 37 formed on the back side of the floating jaw member 38. This jaw member has integral bent edges 39 and 40 for reception of a second clamping pad 41 similar to pad 26 and preferably of equal dimensions. By means of this arrangement, pad 41 may shift slightly longitudinally or, in the case of the floating jaw, may pivot laterally or, both, as it moves to clamping position and thus is self-seating and capable of securing a firm grip upon rough material, as for example a pebbly type of fabric.

As a significant feature of my invention, the floating jaw member 38 is provided with a guide extension 42 which is positioned between shoulders 31 and 22 of the handle member 20 with a slight clearance. Thus, as spring 26 exerts a clamping action upon the structure, the extension 29 carries the floating jaw to the left, as in Fig. 2, and the guide extension 42 causes the entire surface of pad 41 to contact the entire surface of pad 26, and to provide the maximum clamping effect. It will be understood, that when a garment is interposed between these pads, the maximum clamping action is also secured when these pads are in the thus-described confronting relation.

In addition, the guide extension 42 serves a supplementary purpose in causing the upper ends of the jaw member to open to a greater extent than the lower ends thereof when the clamp is fully opened, as seen in Fig. 5. At the time when the clamp is to be inserted in position on the garment, the spring 26 is compressed by movement of handle portions 31 and 20 toward each other. As this occurs, extension 29, which preferably is attached to the second jaw member adjacent the midpoint of the pad 41, pulls the second jaw 38 outwardly and which jaw, by means of its pivoted connection, would normally be free to hang vertically in a plane parallel to the plane
of the other jaw. However, as the handles approach each other, the depending guide extension 42 is engaged by the edges of shoulders 32 and 33 and restrained thereby. As further movement of the handles occurs, the extension 28 pulls the second jaw further to the right, but since the guide extension is held by the shoulders, the upper end of the second jaw then travels in an arc, thus permitting the upper ends of the jaws to separate without further separation of the lower ends thereof. Thus, as the operator inserts the clamp between the garment and bag, sufficient space is provided to readily receive the garment.

While I prefer to employ a spring, and particularly a flat leaf spring, for actuating the clamp, it is apparent that equivalent means could be used without departing from the broader aspects of the invention.

Having thus described the invention, the various objectives heretofore mentioned will be apparent to those skilled in this art. The clamp will be found to hang in a substantially vertical plane when applied to a garment suspended on a bag finisher; the handle portions are located outwardly of that bag without interference therefrom; the uniform application of pressure to the clamped garment over the extended surface provided by the resilient pads avoids the marking or creasing of the garment; the flat spring avoids any likelihood of pinching the fingers of the operator or of non-uniform application of spring pressure after a period of use and the absence of screws or bolts as fastening means contributes to a sturdy construction and to a smooth external appearance of the clamp.

In accordance with the patent statutes, I have described what at present, is considered to be the preferred embodiment of my invention, but it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the true spirit and scope of the invention and I therefore aim to cover, in the appended claims, all such equivalent variations and modifications.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A garment-vent clamp comprising a first frame member having a handle at one end thereof, a second frame member having a handle at one end thereof and pivotally attached to said first frame member, an elongated first jaw member rigidly secured to said first frame member, an elongated self-adjusting second jaw member pivotally secured to said second frame member intermediate the ends of said second jaw member and having a guide extension engaging with and slidably along the handle portion of at least one of said frame members for guided movement with respect thereto and for causing the outer end of said second jaw member to pivot in an arc as it moves toward fully separated position with respect to said first jaw member, resilient pads attached to each of said jaw members in confronting relation to each other, said pads having a length and a width commensurate with closing at least a substantial portion of the vent of a garment clamped therebetween, and a spring means interposed between the handle portions of said frame members for forcing said pads into guided contact with each other.

2. A garment-vent clamp comprising a first frame member having a handle at one end thereof having laterally extending spaced shoulders, a second frame member having a handle at one end thereof and having laterally extending spaced shoulders, pivot means for attaching the respective shoulders of said first and second frame members to each other, an elongated first jaw member rigidly secured to said first frame member, an elongated self-adjusting second jaw member pivotally secured to said second frame member intermediate the ends of said second jaw member and having a guide extension between the spaced shoulders of said first frame member on one side of said pivot means for slidably guided movement with respect to said first frame member and for causing the outer end of said second jaw member to pivot in an arc as it moves toward fully separated position with respect to said first jaw member, resilient pads attached to each of said jaw members in confronting relation to each other, said pads having a length and a width commensurate with closing at least a substantial portion of the vent of a garment clamped therebetween, and a spring means interposed between the handle portions of said frame members for forcing said pads into guided contact with each other.

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