

No. 609,575.

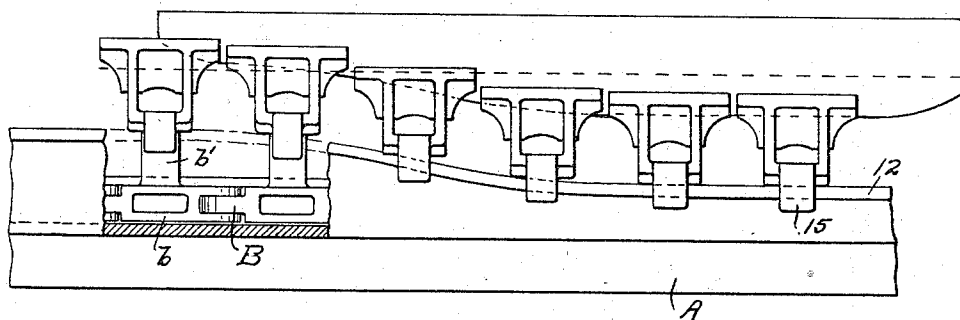
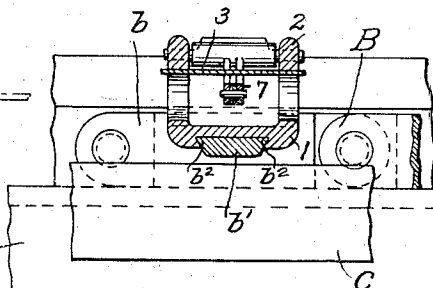
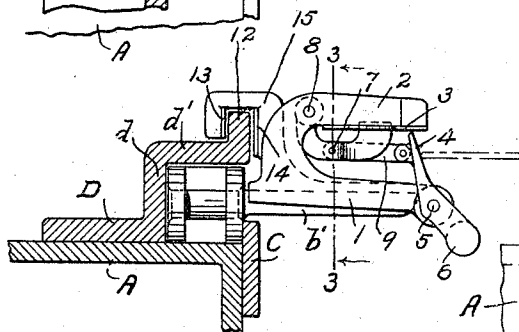
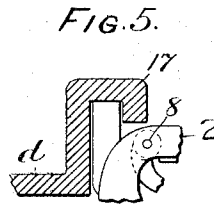
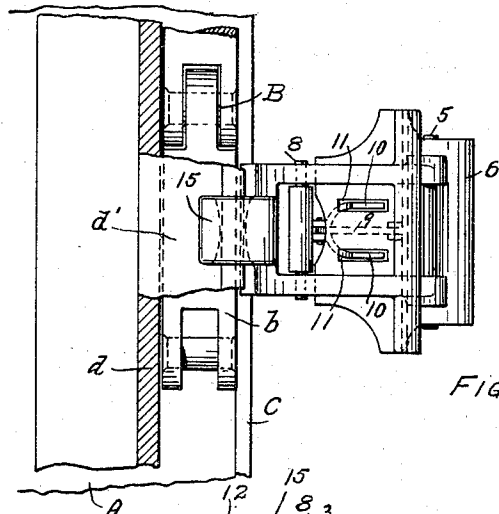
Patented Aug. 23, 1898.

F. I. DANA.

CLIP FOR TENTER MACHINES.

(Application filed Feb. 21, 1898.)

(No Model.)



WITNESSES,

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UNITED STATES PATENT OFFICE.

FREDERICK I. DANA, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
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CLIP FOR TENTER-MACHINES.

SPECIFICATION forming part of Letters Patent No. 609,575, dated August 23, 1898.

Application filed February 21, 1898; Serial No. 671,006. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK I. DANA, of the city and county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Clips for Tenter-Machines; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

The present invention relates to an improved clip or clamp for use in machines in which the clips or clamps are carried by conveyers which travel in planes substantially at right angles to the plane of the material being acted upon, and is more especially designed for use in cloth-stretching or tenter machines.

The object of the invention is to provide a simple and efficient clip or clamp which may be moved laterally with relation to the conveyer by which it is carried, so that said clip may move up into position to bring the jaws upon opposite sides of the plane of the fabric without interfering with the introduction of the fabric into the machine. After the clips come into this position they are moved inward to bring the jaws upon opposite sides of the fabric, the jaws being open at this time.

One feature of the invention relates to the manner of connecting the clip or clamp to the conveyer, and consists in a clip or clamp mounted to slide laterally in relation to the conveyer which carries it. So far as this feature of invention is concerned any suitable form of clip may be used and any suitable means may be employed for sliding the clip laterally; but it is preferred to use the form of clip shown in Patent No. 597,162, dated January 11, 1898, and to employ means for moving the clips laterally, which embodies a second feature of invention.

The second feature of invention relates to the means for operating a laterally-movable clip, and consists in a cam-rail upon the side rail of the machine, which cam-rail engages the clip and resists the lateral strain of the cloth, and this feature is not limited in its application to use in connection with a sliding clip, but may be used in connection with other forms of laterally-movable clips.

The invention also includes the further features and combinations, which will be set forth in the claims.

In the drawings, Figure 1 is a plan view of a preferred form of clip and so much of the side rail of a tenter-machine as is necessary to illustrate the application of the invention thereto. Fig. 2 is a sectional view showing the clip in side elevation. Fig. 3 is a sectional view of line 3 3, Fig. 2. Fig. 4 is a plan view of a portion of the side rail of a tenter-machine, and Fig. 5 is a detail of a modification.

Referring to the drawings, A represents the side rail of a tenter-machine for carrying and guiding the conveyer B, which is guided upon the rail by means of a bar C, projecting above the edge of the rail, and a bar D, secured to the upper face of the rail. The bar D is provided with a vertical part d and a horizontal flange d' , which overlies the conveyer and keeps it in place. The conveyer B is formed in sections consisting of the links b , and some or all of said sections or links are provided with a laterally-projecting arm b' , having guides or ways b^2 formed thereon for supporting and guiding the clip or clamp. The carriage 1, forming the body of the clip, is grooved to embrace the ways b^2 and is provided with an overhanging frame 2, to the under side of which is secured a plate 3, forming the stationary jaw of the clip. The movable jaw 4 of the clip is pivoted on a rod 5 and is provided with a weighted portion 6, which tends to close said jaw. The guard 7 for controlling the closing of the jaw 4 is pivoted at 8 and is connected with the jaw by means of a link 9. The guard is provided with two fingers 10 at its free end, arranged to bear upon the fabric and hold the jaw 4 open until the fabric is drawn from between the plate 3 and said fingers, when they pass through slots 11 in said plate and allow the jaw 4 to close and grip the edge of the fabric.

The clip may be moved laterally upon the guides b^2 by any suitable means, but is preferably so moved by a cam-rail 12, which extends along the side rail and is embraced by the sides 13 and 14 of a groove formed in an arm 15, projecting from the rear of the carriage 1. This cam-rail is preferably located substan-

tially in line with the plane of the plate 3, so that the tension of the fabric will exert a direct pull thereon and will not tend to tip or cramp the conveyer-chain, and there will be less friction between the moving and stationary parts.

Referring to Fig. 4, the operation is as follows: The dotted lines indicate the edge of the fabric. As the conveyers pass around the guide-rails they are in the position shown at the right in Fig. 4 and in the other views—that is to say, they are at one side of the edge of the fabric—and do not, therefore, interfere with the entrance of the fabric into the machine. As the conveyers reach the horizontal plane the jaws of the clips are opened by the usual cam-plate, over which the fabric passes. As the conveyers advance the clips are moved inward by the cam-rail 12 to bring the jaws upon opposite sides of the fabric, and when the clips have reached their inward position the jaw 4 is released and the fingers 10 engage the fabric and hold the jaws open until the fabric is withdrawn from said fingers by the spreading of the side rails, when the jaws close and the fabric is clamped by the clip. When the clips reach the delivery end of the machine, the jaws are opened by the usual cam-plate and the clips are moved bodily back away from the edge of the fabric.

Instead of forming the cam-rail as shown in full lines the rail may have a groove formed therein, as indicated in Fig. 5, and the carriage be provided with an arm 17, projecting into said groove, or the construction of the rail may be otherwise varied without departing from the invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a section of a conveyer, of a laterally-sliding clip or clamp supported thereby, substantially as described.
2. The combination with a section of a conveyer provided with a laterally-projecting arm, of a clip or clamp mounted to slide on said arm, substantially as described.
3. The combination with a section of a con-

veyer provided with a laterally-projecting arm, of a carriage mounted to slide on said arm, a stationary jaw on said carriage, and a movable jaw on said carriage, substantially as described.

4. The combination with a conveyer, of laterally-movable clips or clamps carried thereby, and a cam-rail for engaging said clips and holding them in proper relation to the conveyer, substantially as described.

5. The combination with a conveyer, of laterally-sliding clips or clamps carried thereby, guides for said conveyer, and a cam-rail for engaging said clips and holding them in proper relation to the conveyer, substantially as described.

6. In a tenter-machine the combination with the side rail, of a conveyer carried thereby, laterally-movable clips or clamps carried by said conveyer, and a cam-rail on said side rail for engaging said clips, and resisting the lateral strain on said clips, substantially as described.

7. In a tenter-machine the combination with the side rail, of a conveyer carried thereby, laterally-movable clips or clamps carried by said conveyer, and a cam-rail on said side rail for engaging said clips substantially in line with the fabric, substantially as described.

8. In a tenter-machine, the combination with the side rail, of a conveyer carried thereby, a laterally-sliding clip or clamp carried by said conveyer, and a cam-rail extending the length of said side rail for engaging said clip, substantially as described.

9. In a tenter-machine the combination with the side rail, of a conveyer carried thereby, laterally-sliding clips or clamps carried by said conveyer, a cam for opening the jaws of the clip, means for controlling the closing of the jaws by the fabric, and a cam-rail on said side rail for engaging said clips, substantially as described.

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Witnesses:

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