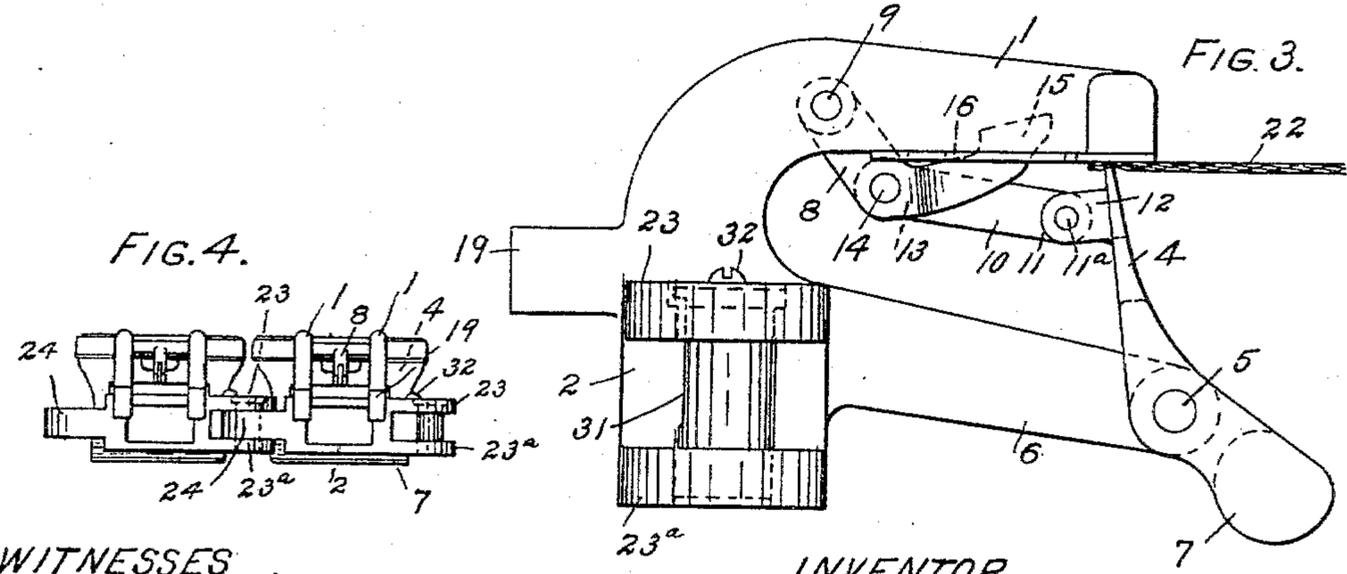
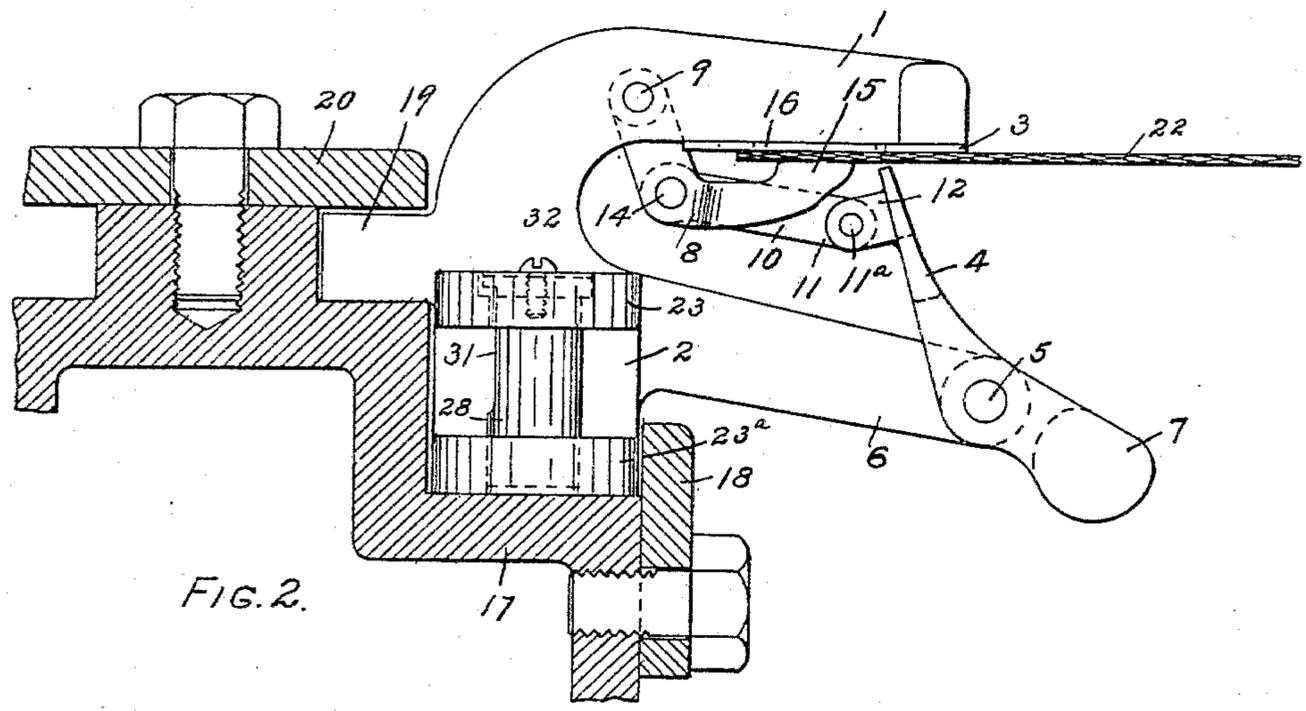
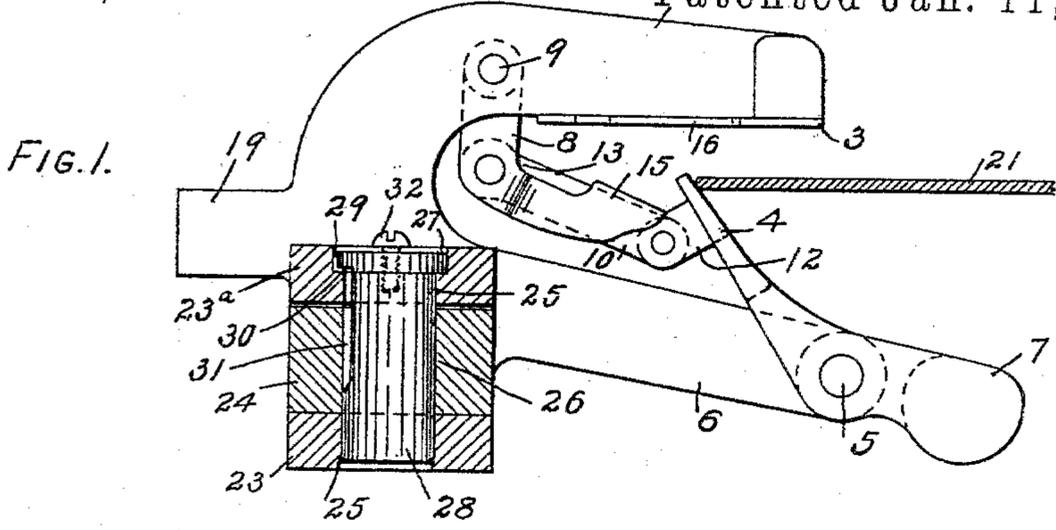


(No Model.)

F. I. DANA.
CLIP FOR TENTERING MACHINES.

No. 597,162.

Patented Jan. 11, 1898.



WITNESSES,
John Henderson
A. A. Bates

INVENTOR,
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 By *Wilmouth H. Dunston*
Att.

UNITED STATES PATENT OFFICE.

FREDERICK I. DANA, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
THOMAS PHILLIPS COMPANY, OF SAME PLACE.

CLIP FOR TENTERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 597,162, dated January 11, 1898.

Application filed May 14, 1897. Serial No. 636,587. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK I. DANA, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Clips for Tentering-Machines; and I 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 invention relates to clips or clamps for tentering-machines, and more especially to that class of clips in which the movable jaw is controlled by an independent guard, and has for its object to provide a clip of the above class which shall be sensitive and accurate in operation and in which there will be no danger of clamping the edge of the fabric between the guard and movable jaw when said jaw opens to release said fabric.

A further object of the invention is to provide an improved means for connecting the clips together to form a chain.

To these ends the invention consists in the features hereinafter set forth in the claims.

In the accompanying drawings is shown an embodiment of the present invention in its preferred form.

Figure 1 is an elevation, partly in section, showing the jaw and guard in position to release or receive the fabric. Fig. 2 is an elevation showing the guard in contact with the fabric and also showing the chain-guide in section. Fig. 3 is an elevation showing the jaw gripping the fabric. Fig. 4 is a view showing a short portion of the chain.

The arms 1 project from the body portion 2 of the clips, which are connected together, as hereinafter described, to form a chain for use in a tentering-machine. A plate 3 is secured to the arms 1 and forms the stationary jaw, against which the fabric is clamped by the movable jaw 4, pivoted at 5 to arms 6, which also project from the body portion 2. The jaw 4 is provided with a weighted portion 7 beyond its pivot, which tends to force said jaw toward the plate 3 to clamp the fabric. The jaw 4 is controlled by a guard 8, pivoted to the arms 1 at 9. The jaw 4 is connected with the guard 8 by means of a link

10, one end 11 of which is pivoted at 11^a to the ears 12, located near the end of the jaw 4, the other end 13 of said link being pivoted to the guard 8 at a point 14 near the pivot of said guard. The free end 15 of the guard 8 is provided with one or more fingers, which are arranged to pass through slots 16 in plate 3 when the jaw 4 is closed.

The clips are connected together and form the links of a chain, which runs in guides on the tentering-machine in the usual manner, as shown in Fig. 2, the bottom of the clips sliding on the rail 17 and being held thereon by the plate 18. The clips are provided with the usual ears or lugs 19, which underlie the plate 20 and prevent the tipping of the clips when the strain is put upon the fabric.

The operation is as follows: The jaw 4 and guard 8 are opened to receive the fabric by means of the stationary cam 21, which engages the jaw 4 and holds the parts in the position shown in Fig. 1 until the fabric has entered between said jaw and guard and the plate 3. When the jaw 4 passes off of the cam 21, the weight 7 moves the parts into the position shown in Fig. 2, with the guard 8 resting upon the fabric and holding the jaw 4 away from the plate 3. It will be seen that while the weight 7 provides an effective force tending to force the jaw 4 toward the plate 3, yet the free end 15 of the guard 8 bears but slightly upon the fabric, owing to the fact that the distances from 5 to 11^a and from 9 to 15 are large as compared with the distance from 9 to 14, and the clip is thus rendered more sensitive and accurate in action. As the fabric 22 passes from between the guard 8 and plate 3 said guard is free to move through the slots 16 and allows the weight 7 to move the jaw 4 toward the plate 3 and clamp the fabric at or near its edge, as shown in Fig. 3.

The jaw 4 is opened to release the fabric by engagement with a cam similar to cam 21 but at the opposite end of the machine. When the jaw is thus opened, the free end 10 of guard 8 quickly moves back of and past the end of jaw 4, and there is thus no danger that the fabric will be caught or gripped between said jaw and guard. It will also be seen that with this construction the gripping

edge of the movable jaw is not interrupted by slots for the passage of the guard, and the cloth is therefore subjected to a more even strain.

5 The clips are connected together to form a chain in the following manner: Each clip is provided with two ears 23 23^a at one end and a single ear 24 at the other end, adapted to fit between the ears 23 23^a of the adjacent
 10 clip. Holes 25 are bored in the ears 23 23^a, and a hole 26 is bored in the ears 24. The hole 25 in the ear 23 is counterbored at 27 to receive the heads of pins 28, which pass through the holes 25 and 26 and serve to connect the clips. The counterbore 27 is deeper
 15 than the head of the pin 28, so that an oil-cup is formed by said counterbore above the head of said pin. The head of the pin 28 is flattened at 29 and is undercut at 30, and the pin
 20 is flattened at 31, thus forming a passage for the oil to the bearing-surface of the pin. A removable latch or stop in the form of a screw 32, having its head overlying the head of pin 28, prevents the accidental escape of the pin
 25 28. With this construction the clips may be readily united to form a chain, and any of the clips may be readily removed from the machine when broken or out of order and others inserted. Moreover, with this construction
 30 the pins do not rest upon the rail 17 and do not, therefore, wear a groove in said rail, as is the case when the head of the pin is in the ear 23^a and rests upon the rail 17.

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

1. A clip for a tentering-machine comprising a stationary jaw, a movable jaw, a guard mounted independently of said movable jaw, and a connection between said movable jaw
 40 and said guard for moving said guard back of

and past the movable jaw as said jaw opens to release the fabric, substantially as described.

2. A clip for a tentering-machine comprising a stationary jaw, a pivoted jaw, a pivoted guard, a link pivoted to said guard near the
 45 pivot thereof, and to said jaw at a relatively-greater distance from the pivot of said jaw, substantially as described.

3. A clip for a tentering-machine comprising a body portion 2, one or more arms 1 projecting therefrom, a plate 3 secured to said
 50 arms, one or more slots in said plate, one or more arms 6 projecting from said body portion, a jaw 4 pivoted at 5 to said arms 6 and provided with a weighted portion 7, a guard
 55 8 pivoted at 9 to the arms 1, and having its free end arranged to pass through the slots 16 a link pivoted to the jaw 4 at 11^a and to the guard 8 at 14, the distance from 5 to 11^a being
 60 greater than the distance from 9 to 14, substantially as described.

4. A series of clips provided with ears having holes adapted to register with each other, the hole in the upper ear being counterbored, a pin fitting said holes and provided with a
 65 head less in length than the depth of the counterbore and an oil-passage formed in the surface of the pin, substantially as described.

5. A series of clips provided with ears having holes adapted to register with each other,
 70 the hole in the upper ear being counterbored, a pin fitting within said holes and provided with a head fitting within said counterbore, and a stop for preventing the escape of said pin, substantially as described.

FREDERICK I. DANA.

Witnesses:

IRA L. FISH,
 R. A. BATES.