

No. 650,385.

Patented May 29, 1900.

C. J. GADD.

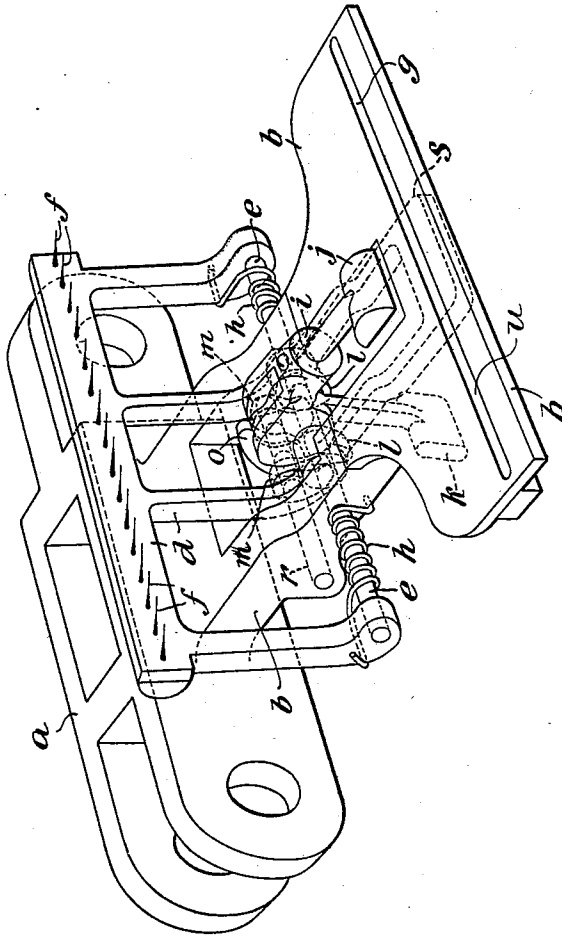
FASTENING DEVICE FOR TENTERING MACHINES.

(Application filed June 1, 1899.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1



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Fig: 2

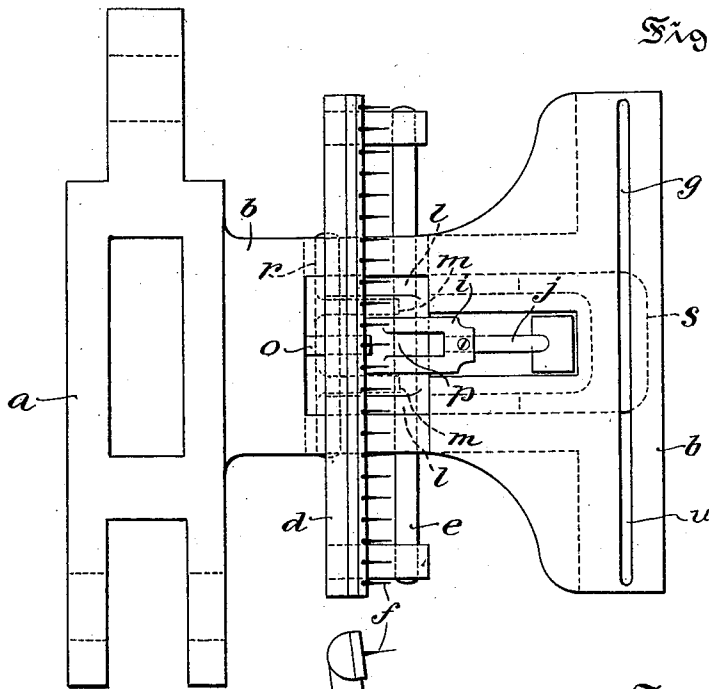


Fig: 3

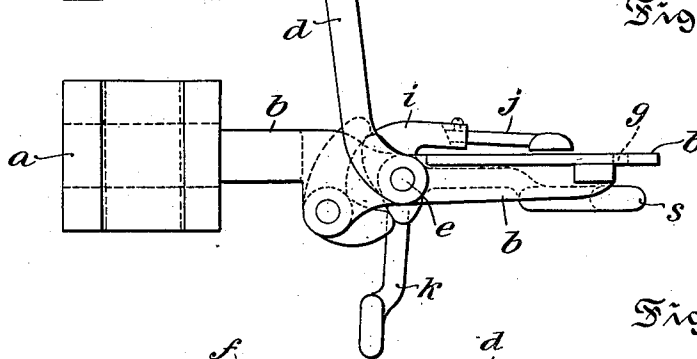
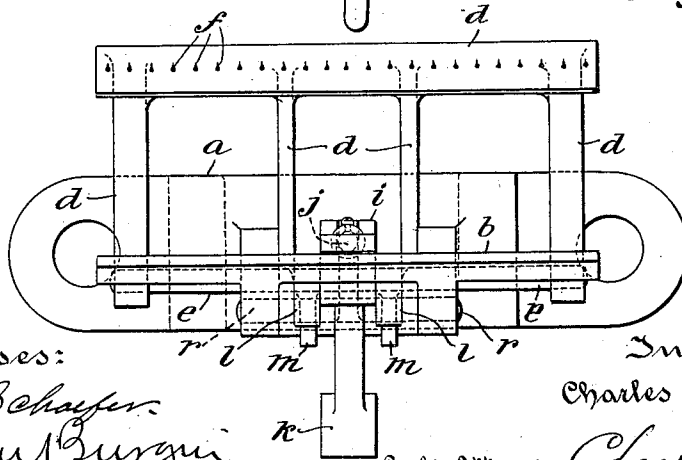


Fig: 4



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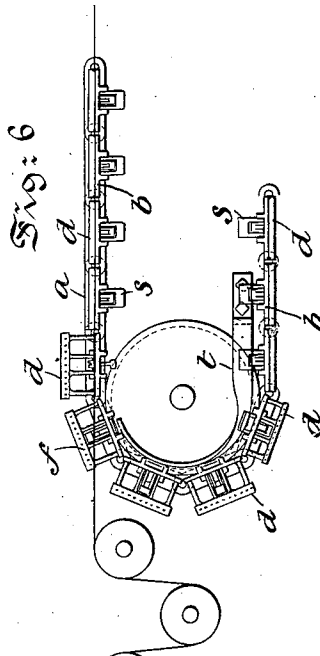
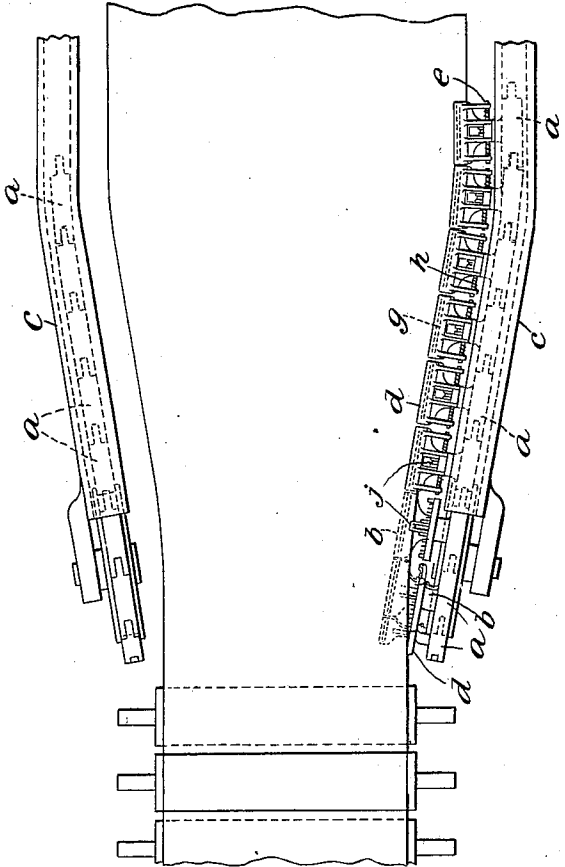
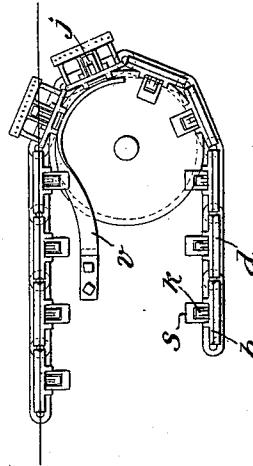
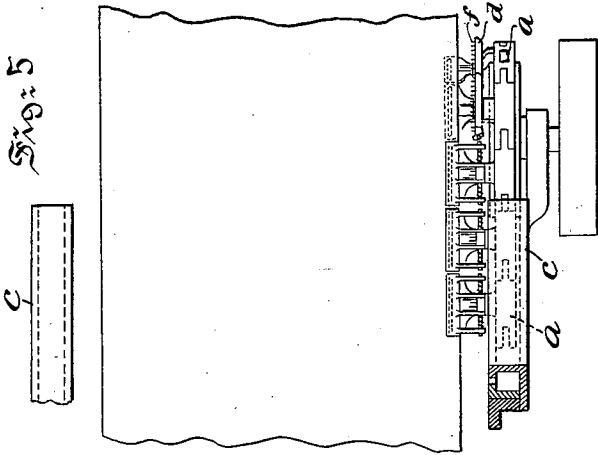
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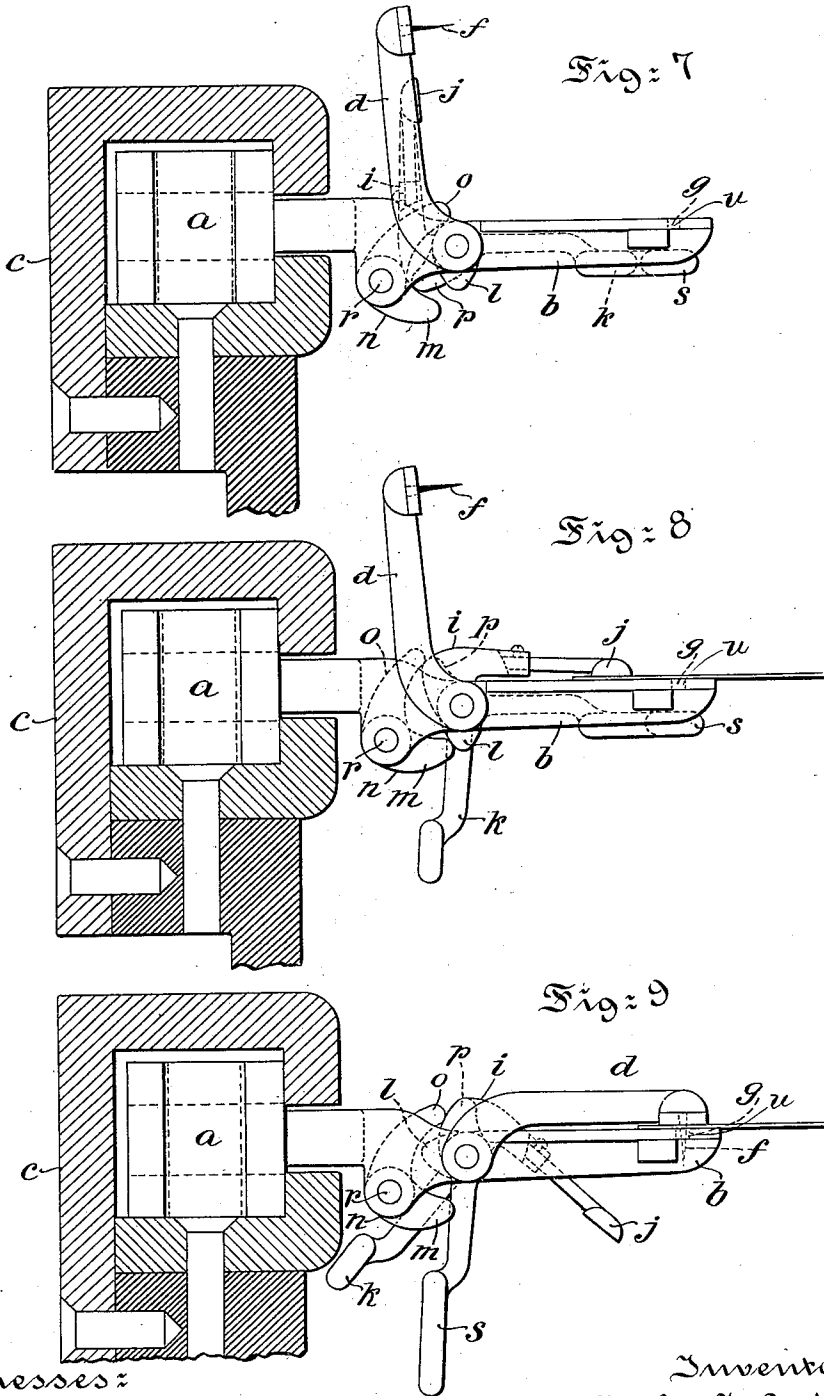
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# UNITED STATES PATENT OFFICE.

CHARLES J. GADD, OF PHILADELPHIA, PENNSYLVANIA.

## FASTENING DEVICE FOR TENTERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 650,385, dated May 29, 1900.

Application filed June 1, 1899. Serial No. 713,955. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. GADD, a subject of the Queen of Great Britain, and a resident of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Fastenings for Tentering-Machines, of which the following is a specification.

My invention relates to improvements in devices for engaging and holding the sides of a piece of fabric in its passage through a tentering-machine; and the object of my invention is to furnish a movable pin fastening for this purpose which will automatically and positively engage the fabric at a certain predetermined distance from its selvage.

The pin clasps or fastenings now used in tentering-machines are carried on links of endless chains, one chain being placed at each side of the machine, and the fabric is fed to the machine by an operator and is forced down over the pins. This machine necessarily runs at a slow speed and despite the utmost care and experience upon the part of the operator it is impossible to cause the pins carried by the several links of the chains to engage the fabric evenly along its selvage. On one or both sides of the fabric the pins engage it more or less irregularly—that is, at varying distances from the selvage—and hence the fabric on leaving the machine is slightly wider in some places than in others.

My pin clasps or fastenings are carried by the links of the chain or by an endless belt in the usual manner, each link preferably carrying one unit of the fastening and each unit of the fastening being, so far as its own operation is concerned, independent of the other units. The links of the chain in my device are furnished with or form tables upon which the fabric rests, and my pin-plate is movable, the pins being adapted to be driven through the fabric by the movement of the plate. The movement of the pin-plate is regulated, preferably, by an adjustable regulator, by means of which the pins may be caused to engage the fabric at (within certain limits) any desired distance from the selvage.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate similar parts throughout the several views, Figure 1 is a perspective view of one link of a chain fur-

nished with my improved fabric-engaging device; Fig. 2, a plan of a link fitted with my fabric-engaging device; Fig. 3, a side elevation of Fig. 2; Fig. 4, a front elevation of Fig. 2; Fig. 5, a plan of part of a tentering-machine furnished with chains equipped with my device; Fig. 6, a side elevation of Fig. 5, the chain-guides being, for the sake of clearness, omitted; Fig. 7, a side elevation of my device, both the toe-piece or regulator and pin-plate being raised, the chain-guides being shown in section; Fig. 8, a similar view, the toe-piece being shown in contact with the fabric and the pin-plate being raised; Fig. 9, a similar view showing the position of the toe-piece when the cloth is drawn away from it and the pin-plate lowered so that the pins engage the fabric.

*a* is a link of a chain, and *b* a table secured to this link in any suitable manner.

*c*, Figs. 5, 7, 8, and 9, represents guides in which the links are carried. These guides, as is usual in tentering-machines, are close together at the forward end of the machine and then diverge for a certain distance and finally run parallel to one another to the rear of the machine, as shown in Fig. 5. The purpose of this arrangement is to stretch the fabric, which when fed to the machine is narrow, but which leaves it stretched to its maximum width.

*d* is a pin-plate carried on a shaft *e*, carried in bearings in table *b*.

*f* represents pins carried by plate *d*, which when the plate is lowered pass through the fabric and into or through a slot or holes *g* in the table *b*.

*h* is a spring (in the drawings shown upon shaft *e*) which normally tends to close the pin-plate *d* against table *b*. Upon the shaft *e* is loosely hung a toe-piece or regulator *i*, which is furnished with two arms—an upper arm *j*, which is adjustable lengthwise and the outer end of which is adapted to engage the fabric before it is fastened by the lowering of the pin-plate, and a lower arm *k*, which is adapted to be engaged by an opener in order to raise the upper arm *j* at the proper time, as hereinafter described. The arms *j* *k* together form a bell-crank lever.

*l* represents lugs carried by the pin-plate, which when the pin-plate is raised and the arm *j* of the regulator is engaging the fabric,

as shown in Fig. 8, engage the lower arms *m* of a trigger *n*, the upper arm *o* of which rests against a lug *p*, carried by the regulator *i*. The trigger *n* is carried by a shaft *r*, carried in suitable bearings in table *b*.

Referring now to Figs. 5 and 6, the fabric to be stretched is fed to the machine, its edges passing over and resting on the tables *b*. The chains or belts carrying the tables are endless, and as they pass over the pulley at the front of the machine the lower arm *k* of the regulator and the lower arm *s* of the pin-plate engage operators or lifters *t*, Fig. 6, carried by the frame of the machine, and are lifted to the position shown in Fig. 7. This lifting winds up the operating-spring *h*. The fabric now rests upon the table *b* at the front of the machine, and as soon as the arm *k* passes clear of the lifter *t* it falls, and the arm *j* falls with it until it engages the top of the fabric. As soon as the regulator falls the lugs *p* carried by it engage and raise the upper arm *o* of the bell-crank-shaped trigger *r*, the lower arm *m* of which is then moved into contact with lugs *l*, carried by the pin-plate. These positions are shown in Fig. 8. The arm *s* of the pin-plate now passes clear of the opener *l*, and the trigger *n* holds the pin-plate in its raised position. As the chains or belts pass forward the diverging form of the guides gradually draws the arms *j* of the regulators toward the edge of the fabric, and presently they are drawn past the edge, when they fall through a slot in table *b*. As soon as they fall the lugs *p*, carried by the regulator, are moved away from arm *o* of trigger *n*, permitting this arm to move inward and the arm *m* to move outward. This releases the pin-plate *d*, which falls to the position shown in Fig. 9, driving the pins through the fabric. As the pin-plates are released and fall immediately when the arm *j* of the regulator passes over the edge of the fabric, the pins carried by the several pin-plates will always engage the fabric at the same distance from its selvage edge.

The arm *j* of the regulator is preferably made so that it can be adjusted lengthwise. By shortening this arm the pins will engage the fabric farther from its selvage edge, and by lengthening it they will engage it nearer to this edge.

The pins are in engagement with and hold the fabric until the rear end of the machine is reached. At this point the arms *s* are engaged by openers *v*, Fig. 6, which lift them and raise and hold the pins clear of the fabric until they have been moved around completely out of its way on the belt or chain carrying pulleys at the rear of the machine.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States—

1. In a tentering-machine, a clip or clamp consisting of a lower jaw, adapted to be attached to a draft device, and an upper jaw pivoted to the lower jaw and having a series

of pins adapted to pass through a fabric on the lower jaw and to extend to points below the upper surface of said lower jaw, in combination with means for moving the upper jaw away from the lower jaw to permit the fabric to be removed from or inserted in the clamp.

2. In a tentering-machine, a clip or clamp consisting of a lower smooth-surfaced jaw adapted to support a portion of the fabric to be operated on, an upper jaw movable to and from the lower jaw and provided with pins adapted to extend through the fabric on the lower jaw and to points below the smooth surface of said lower jaw, and a spring acting to hold the jaws together, in combination with means for separating said jaws to permit the fabric to be inserted in or removed from the clip.

3. The herein-described clip or clamp for a tentering-machine consisting of a lower jaw having means for attachment to a draft device and having a slot, *g*, formed therein, an upper jaw pivotally connected to the lower jaw and provided with a series of pins adapted to pass through a fabric and into said slot in the lower jaw, and a spring acting to hold said jaws together.

4. A clip or clamp for a tentering-machine consisting of a lower jaw or member provided with means for attachment to a draft device, and an upper jaw connected to the clip to move toward and from the lower jaw, said upper jaw having on its lower face a series of pins adapted when the jaws are in operative position to extend below the upper surface of the lower jaw.

5. The herein-described clip or clamp for a tentering-machine consisting of a lower jaw or member having at one end a chain-link and having its opposite end expanded to form a fabric-support, and an upper jaw pivotally connected to the lower jaw, between said link and fabric-support and provided with a series of pins adapted when the jaws are in operative position to extend to points below the upper surface of the fabric-support of the lower jaw.

6. The combination in a tentering-machine of carrying links or belts, slotted tables carried by said links or belts, a shaft mounted in bearings carried by each said table, a pin-plate mounted on said shaft, a spring tending to close said pin-plate against said table, a bell-crank-shaped regulator carried on said shaft, lugs or arms carried by said regulator, a trigger carried on a shaft carried by said table and furnished with arms adapted to engage the arms or lugs carried by said pin-plate and regulator, and means, carried by the frame of the machine, for operating said pin-plate and regulator, all substantially as set forth.

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Witnesses:

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