

J. L. SHEPPARD.
Bale-Band Tightener.

No. 209,363.

Patented Oct. 29, 1878.

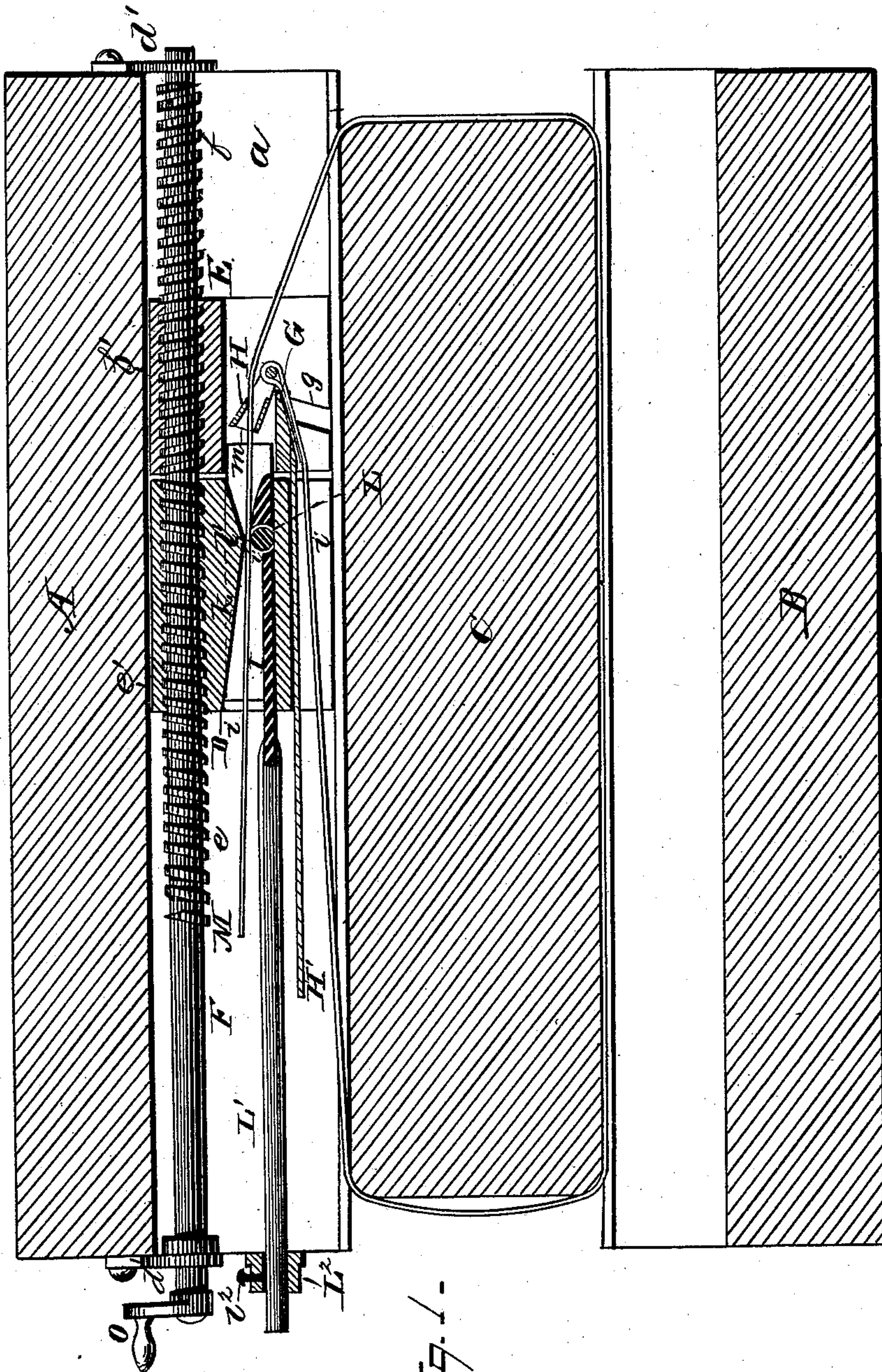


Fig. 1 -

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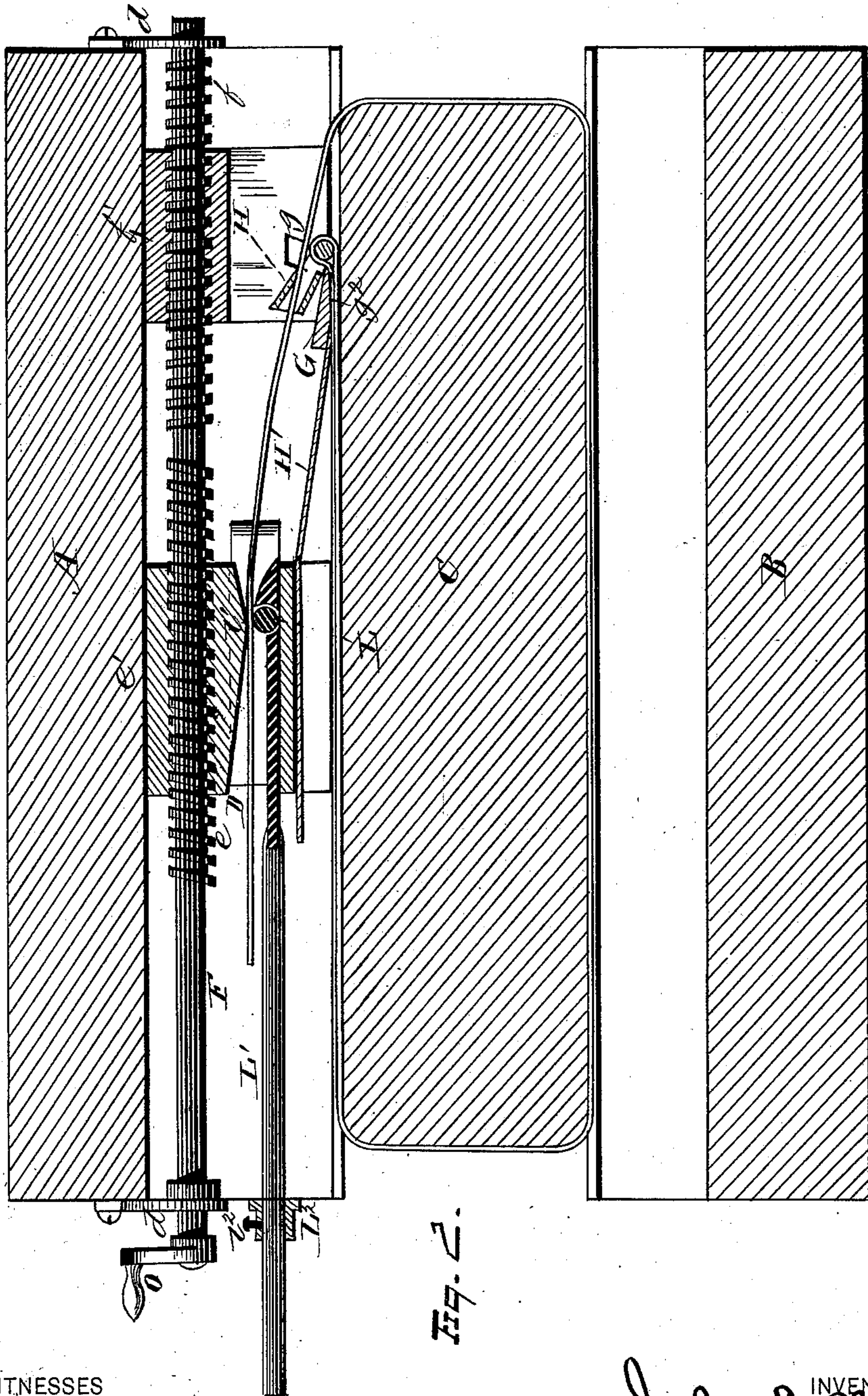


Fig. 2.

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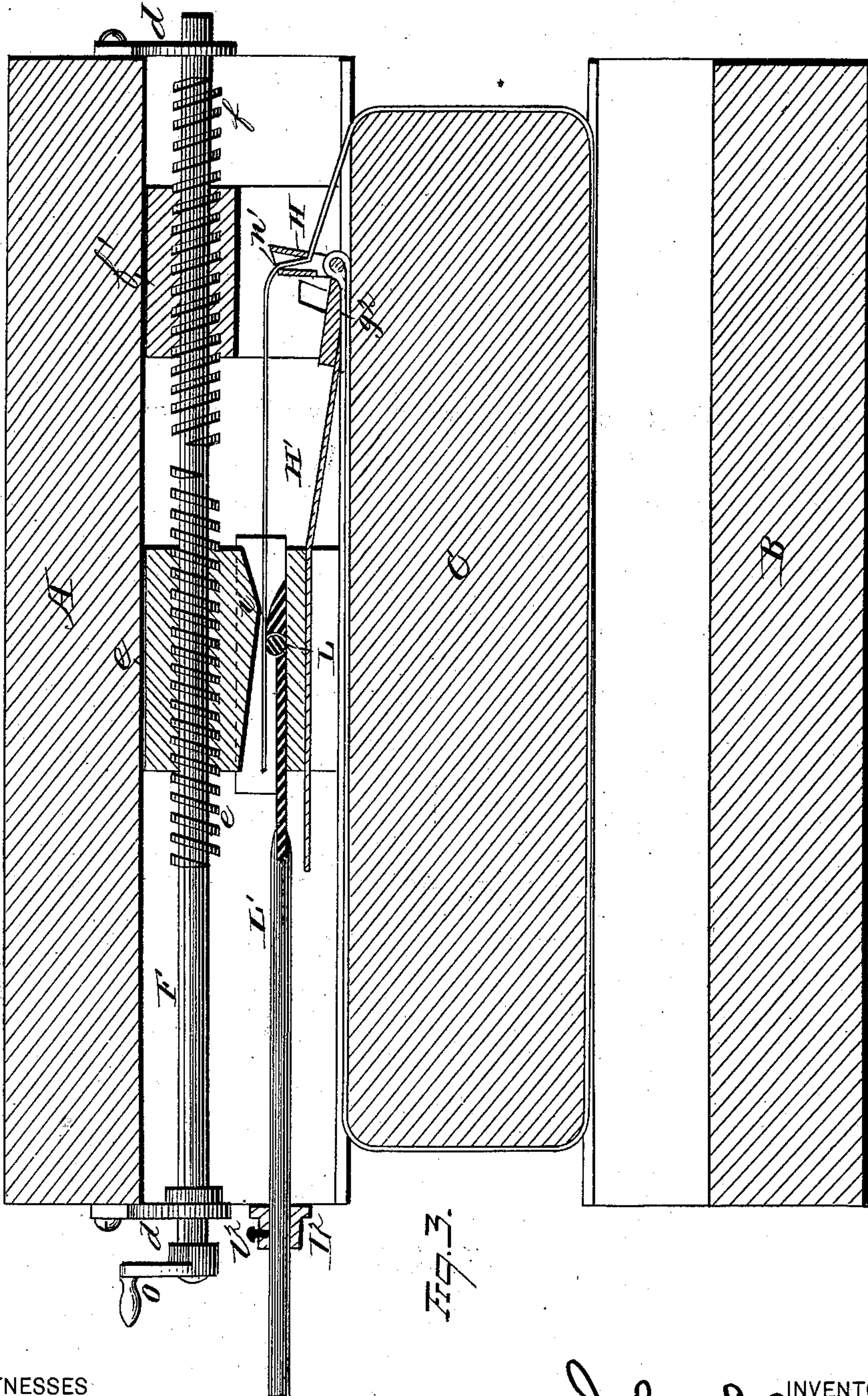
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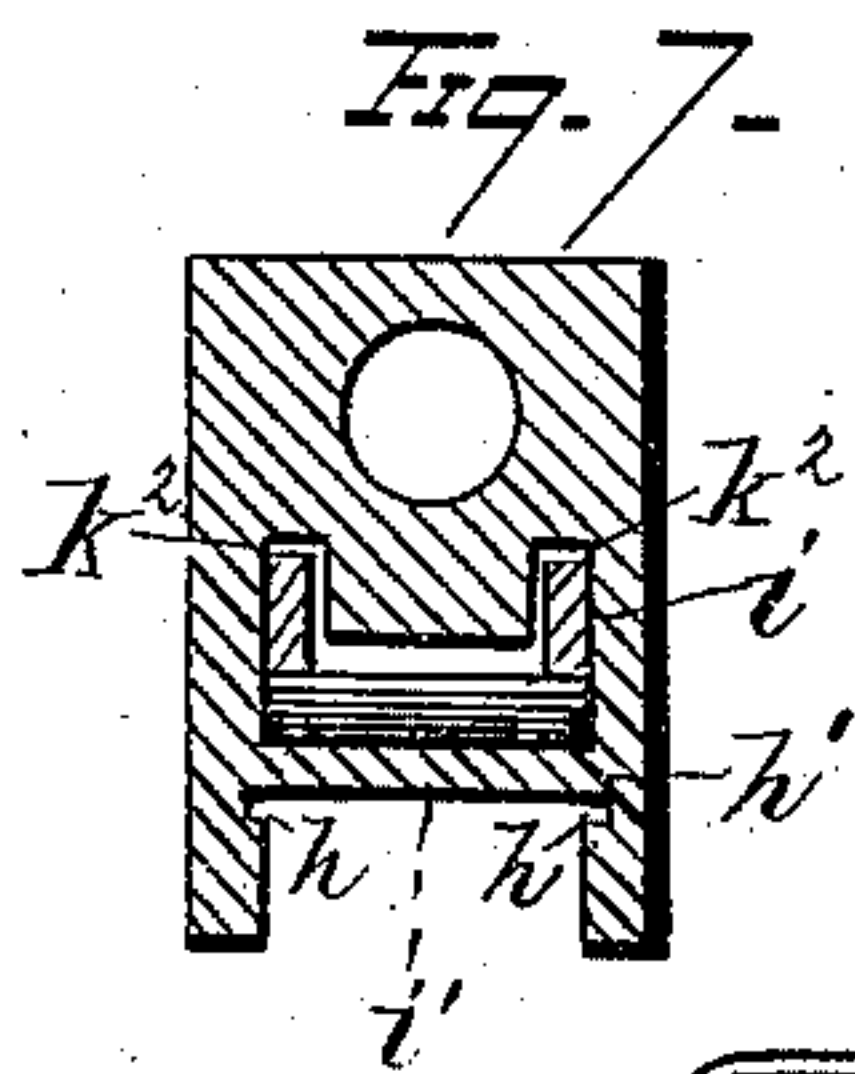
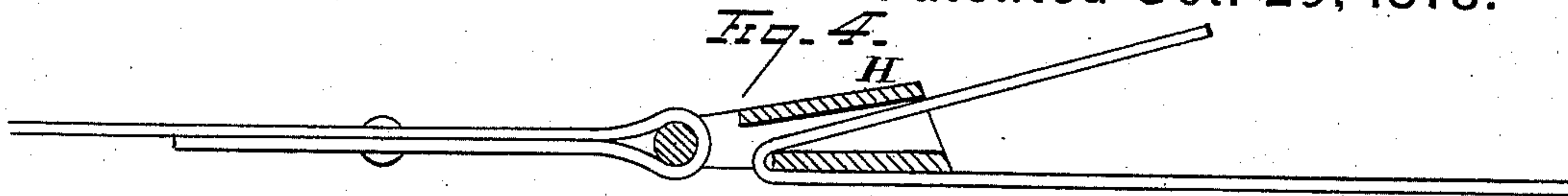


Fig. 5.

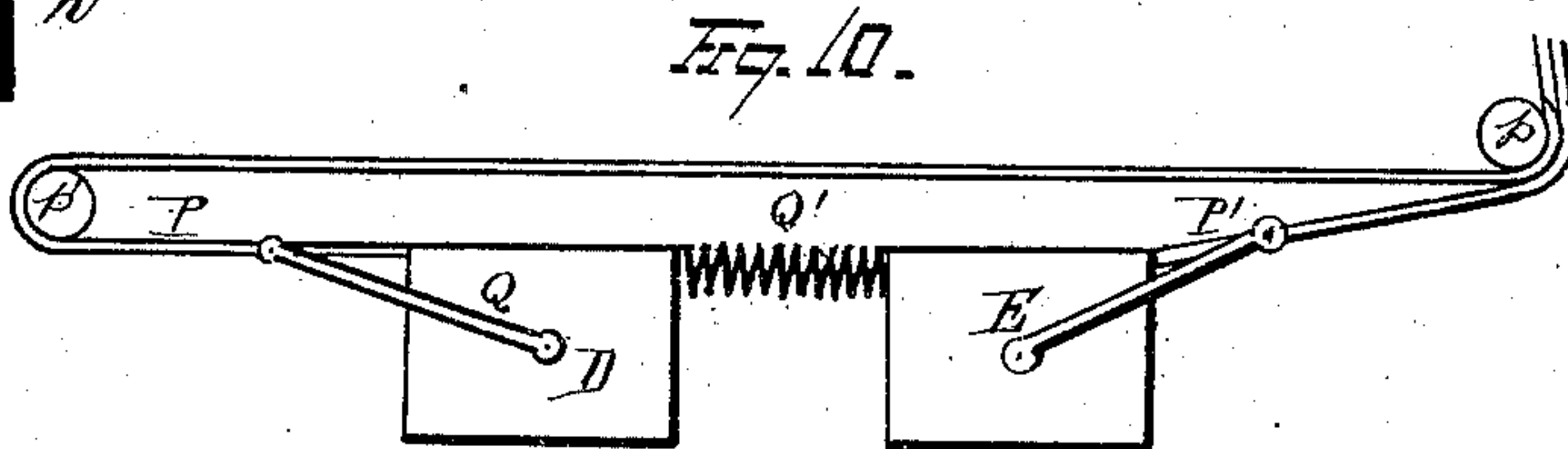
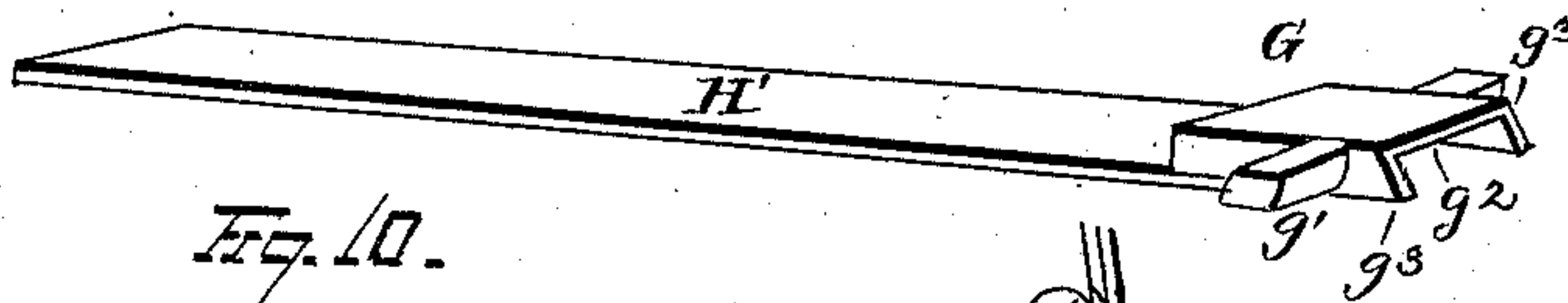


Fig. 6.

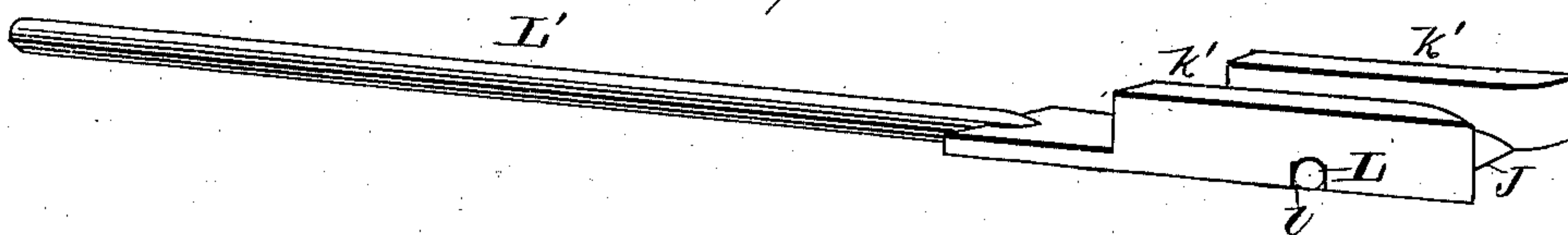


Fig. 8.

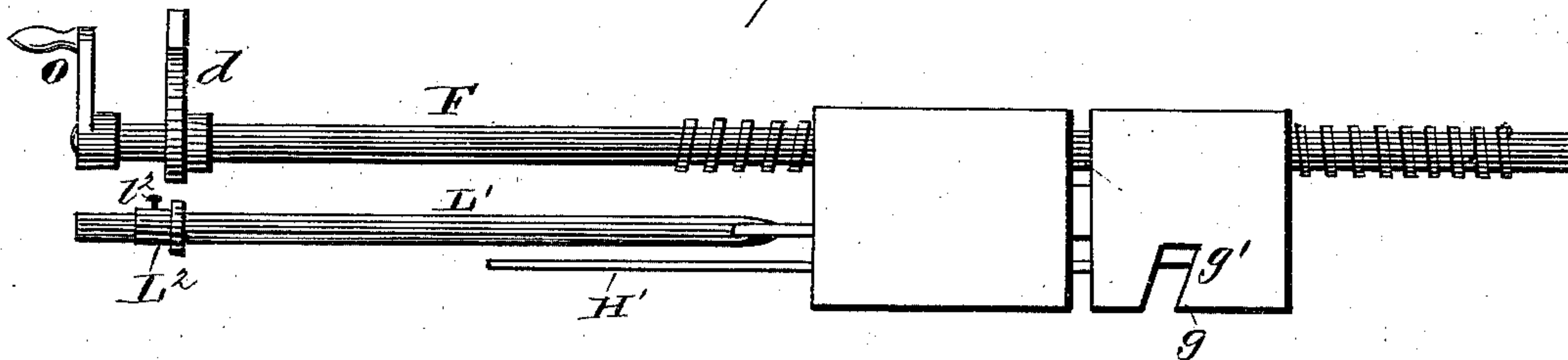
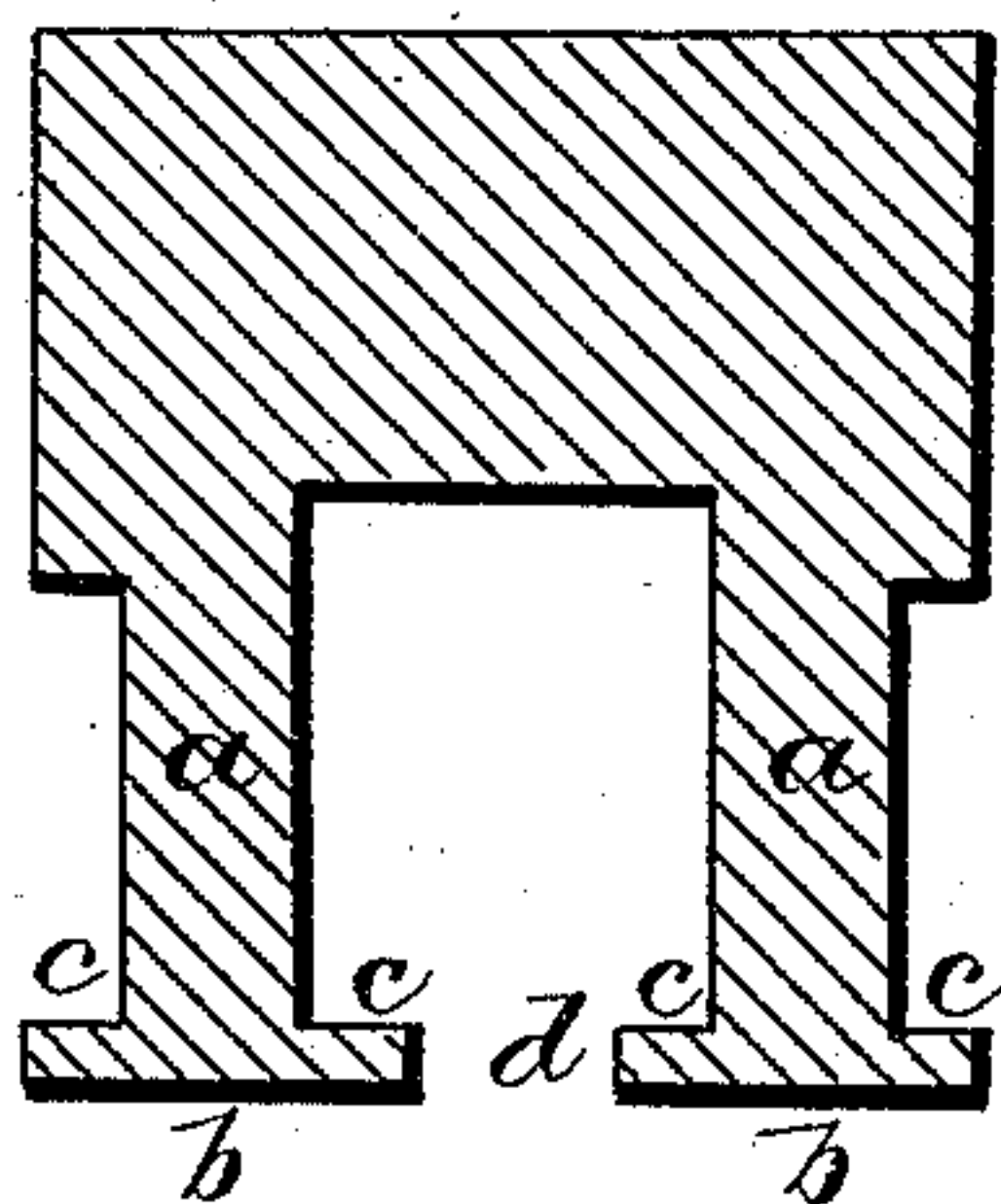


Fig. 9.



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UNITED STATES PATENT OFFICE

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IMPROVEMENT IN BALE-BAND TIGHTENERS.

Specification forming part of Letters Patent No. **209,363**, dated October 29, 1878; application filed August 19, 1878.

To all whom it may concern:

Be it known that I, JOHN L. SHEPPARD, of Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Bale-Band Tighteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in bale-band tighteners, the object being to provide a band-tightener of such construction that both ends of the bands may be subjected to equal strain, and the bands on bales of varying width be readily tightened without waste of time in readjusting the parts of the tightener; and to this end my invention consists, first, in the combination, with the platen of a press, of two reciprocating slides arranged within the groove between the rails on the platen, and adapted to be moved toward and away from each other on a horizontal line, and mechanism for moving them toward and from each other, one of said slides provided with a buckle-stop, and the other with a clamp for grasping the free end of the band, whereby strain may be exerted equally on opposite ends of the band and the slack quickly taken up by moving the slides away from each other.

My invention further consists in the combination, with the platen of a press, of two reciprocating slides located in the groove between the adjoining rails on the face of the platen, one of said slides provided with a buckle-stop, and the other with a clamp for grasping the free end of the band, suitable mechanism being connected with said slides for moving them toward or away from each other, whereby the band-tightening mechanism is located over the bale and within the face of the platen, and thus the ends of the band are simultaneously subjected to an equal strain and the slack readily taken up on bales of varying widths.

My invention further consists in the combination, with the platen of a press, of two slides, for holding the opposite ends of the band while the required strain is exerted on the

same, and a shaft provided with right and left hand screw-threads, which fit within correspondingly screw-threaded nuts attached to or formed as a part of the slides, whereby the revolution of the screw-threaded shaft in one direction operates to force the slides away from each other and exert an equal strain on the opposite ends of the band, while the shaft being revolved in the opposite direction operates to draw said slides toward each other.

My invention further consists in the several details in construction and combinations of parts, as will hereinafter more fully appear from the accompanying description and claims.

In the accompanying drawings, Figure 1 is a vertical section of the platens of a cotton-press having one form of my improvement applied thereto, the tightening mechanism being in position for commencing the strain on the band ends. Fig. 2 is a similar view of the parts after the required strain has been exerted on the band. Fig. 3 represents the position of the parts when the buckle and free end of the band are released from their respective slides. Fig. 4 is a vertical section of the buckle when secured to the band. Fig. 5 is a view, in perspective, of the buckle-stop. Fig. 6 is a detached view, in perspective, of a reciprocating clamp which is located within the slide, for grasping the free end of the band. Fig. 7 is a transverse section of the slide within which the free end of the band is secured. Fig. 8 is a side elevation of the tightening mechanism detached from the press. Fig. 9 is a transverse section of a portion of the upper platen of the press. Fig. 10 is a modification.

A represents the upper and B the lower platens of a cotton press. C is a bale of cotton placed between the opposing faces of platens A B. The face of the upper platen is provided with rails *a*, to the lower edges of which are secured in any desired manner the plates *b*, the same being of greater width than the thickness of the rails, and thereby constituting trackways *c* for supporting the slides D E, the space *d* between the tracks *c* being of sufficient width to allow of the insertion and removal of the bale-band. F is a shaft, the ends of which are supported in suitable shaft-hangers *d'*, attached to the opposite sides

of the platen. Shaft F is provided with right and left handed screw-threads $e f$, which fit within correspondingly screw-threaded nuts or boxes $e' f'$, attached to or formed solid with the slides D E. By turning the shaft F in one direction the slides are moved away from each other, while the shaft being turned in an opposite direction causes the slides to approach each other. The sides of slide E are provided with inclined open slots g , for the reception of the lugs g^1 on the opposite edges of the buckle-stop G. The lower side of the buckle-stop is provided with an inclined groove, g^2 , for the reception of the band near the buckle H. The front edges or faces g^3 are beveled off, as shown, for a purpose hereinafter described. To one end of the stop is secured a spring-plate, H', one end of which has its edges located in grooves h formed in opposite sides of the slide D and immediately below the horizontal partition h' formed therein. Slide D is subdivided into upper and lower compartments, i and i' . The upper compartment, i , is formed with its upper wall, k , outwardly flaring from the throat to the opposite ends of the slide.

I is a reciprocating clamp, consisting of the bottom plate, J, which travels upon the floor of the partition h' , and is provided with sides k^1 , the upper edges of which extend into the grooves k^2 in the upper wall of the slide. The sides and bottom of the clamp are outwardly flared toward the other slide, E, for the purpose of readily receiving the free end of the band after it has been passed through the slide E. The sliding clamp I is formed with open slots l for the reception of a roller, L.

It will be observed that when the slide is moved outwardly and roller L moved away from the throat there will be ample space for the ready insertion of the free end of the band, and by moving the roller back it raises the band up against the sharp edge l^1 on the wedge-shaped upper wall of the slide, and firmly wedges the band between the roller and clamping-projection of the wall of the slide. In other words, the throat of the slide D may be varied in size by moving the roller L to or from the same. By moving the roller outwardly therefrom the free end of the band may be freely inserted; but when the band is inserted and the roller moved in the opposite direction the throat is contracted in size and the band firmly held therein. The frictional contact of the roller and wall of the slide with

tion of a single tightener, as each device operates in the same manner.

The free end M of the band is first inserted in the outer end of the slide E, and passed through the same, beneath the buckle-stop G and beneath the partition h' and spring-plate H', in the slide D, and around the bale. The band is then drawn through until the buckle H rests against the end faces g^3 of the buckle-stop. The buckle is then turned over upon the stop, as illustrated in Fig. 1, in which position the buckle-opening m is brought in line with the band. The free end M of the band is then passed through the opening m in the buckle and into the upper compartment of slide D, through the throat of the same, the reciprocating clamp being retracted to allow of the ready admission of the band. The end of the band ordinarily extends a sufficient distance through the slide so that the operator may reach it from the rear side of the platen and pull it through to take up any free slack in the band. The clamp I is then forced inwardly, and the free end of the band firmly clamped in place between the roller L and the sharp edge l^1 of the slide. The screw-threaded shaft F is then turned, either by a crank, O, as represented in the drawings, or, preferably, by suitable gearing driven by any motive power which will operate all of the shafts attached to the platen simultaneously. As the shaft is turned in one direction the slides are forced apart and strain imparted to the opposite ends of the band. The free end is firmly secured within the slide D, and is drawn through the buckle in slide E, while the buckle is prevented from longitudinal movement by means of the buckle-stop. When the strain is exerted on the buckle end of the band it operates to draw the lugs g^1 of the buckle-stop downwardly until they rest upon the trackways c . When the desired strain has been exerted on the ends of the band, shaft F is turned in the opposite direction, which causes the slides to approach each other. As the sliding clamp I is retarded in its movement, owing to the friction on the rod attached thereto, caused by the set-screw, the slide E will move faster than the clamp, and thus the throat j will be enlarged sufficiently to release the free end of the band.

Again, as the strain on the buckle end of the band is relaxed, at the same time the spring-plate operates to raise the stop, and forms a bend, n' , on the free end of the band,

of parts and relative position, is adapted to tighten the bands on bales of different dimensions without the necessity for readjusting any of the parts of the tightener, and also but little time is expended in securing and tightening the bands, as the releasing and tying the band ends are effected in an automatic manner.

Fig. 10 represents a modification. Instead of imparting motion to the slides D E by means of a right and left hand screw-threaded shaft the same can be effected by bands or chains P P'. The band or chain P extends beneath a roller or pulley, *p*, journaled in suitable brackets attached to the side of the platen, and from thence over both slides to the opposite side of the platen, and over a pulley, *p'*, and its end is firmly secured either directly to the slide D or to a bail, Q, attached to the central portion of the slide. The band or chain P' is attached in the same manner to the slide E. The ends of the band are then wound loosely about a pulley on a continuously-driven shaft, and by tightening the coils on the revolving pulley the same as in raising the ram of a power drop-hammer, the slides are forced apart and the desired strain exerted on the opposite ends of the bands. The slides are returned to their normal position by means of a spring, Q'.

I do not restrict myself to any particular method of exerting strain on the bands or chains, but have noted the above method as one that may be employed, if desired.

I make no claim in this patent to the construction of buckle H, as such device forms the subject-matter of another application for patent.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the platen of a press, of a band-tightener consisting essentially of two slides located in the groove between two adjacent rails on the face of the platen, one provided with a buckle-stop and the other with a bale-band clamp, and suitable means for imparting a reciprocating movement to said slides, substantially as set forth.

2. The combination, with the platen of a press, of two reciprocating slides located in the groove between the adjoining rails on the face of the platen, substantially as set forth.

3. In a bale-band tightener, the combination, with two reciprocating slides provided with

devices for holding the opposite ends of the band while strain is imparted to same, of an actuating-shaft provided with right and left hand screw-threads, substantially as set forth.

4. In a band-tightener, the combination, with a slide adapted to travel in a groove in the face of the platen, said slide having open slots formed in its sides, of a buckle-stop provided with side lugs which fit within said open slots, substantially as set forth.

5. In a band-tightener, the combination, with two reciprocating slides, of a buckle-stop having a spring-plate attached thereto, substantially as set forth.

6. In a band-tightener, a slide provided with outwardly-flaring upper wall, in combination with a sliding clamp having a roller journaled therein which is adapted to be moved toward and from the throat of the slide, substantially as set forth.

7. In a band-tightener, the combination, with a slide having a downwardly-projecting upper wall, of a sliding clamp having a roller journaled therein, substantially as set forth.

8. In a band-tightener, a slide provided with an upper and a lower compartment, the upper compartment having a sliding band-clamp located therein, and the lower compartment provided with grooves for retaining and guiding the rear end of the buckle-stop, substantially as set forth.

9. In a band-tightener, the combination, with a slide adapted to travel in a groove in the face of a press-platen, of a sliding clamp provided with a rod and means for regulating the friction on said rod, substantially as set forth.

10. The combination, with the platen of a press, of band-tightening mechanism located within the grooves in the upper platen, and adapted to impart the required strain on opposite ends of the band, substantially as set forth.

11. The combination, with the platen of a press, of band-tightening mechanism located within the grooves in the platen, and adapted to impart the desired strain and automatically release the opposite ends of the bale-band, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of August, 1878.

JOHN L. SHEPPARD.

Witnesses:

THOS. B. HALL,

E. J. NOTTINGHAM.