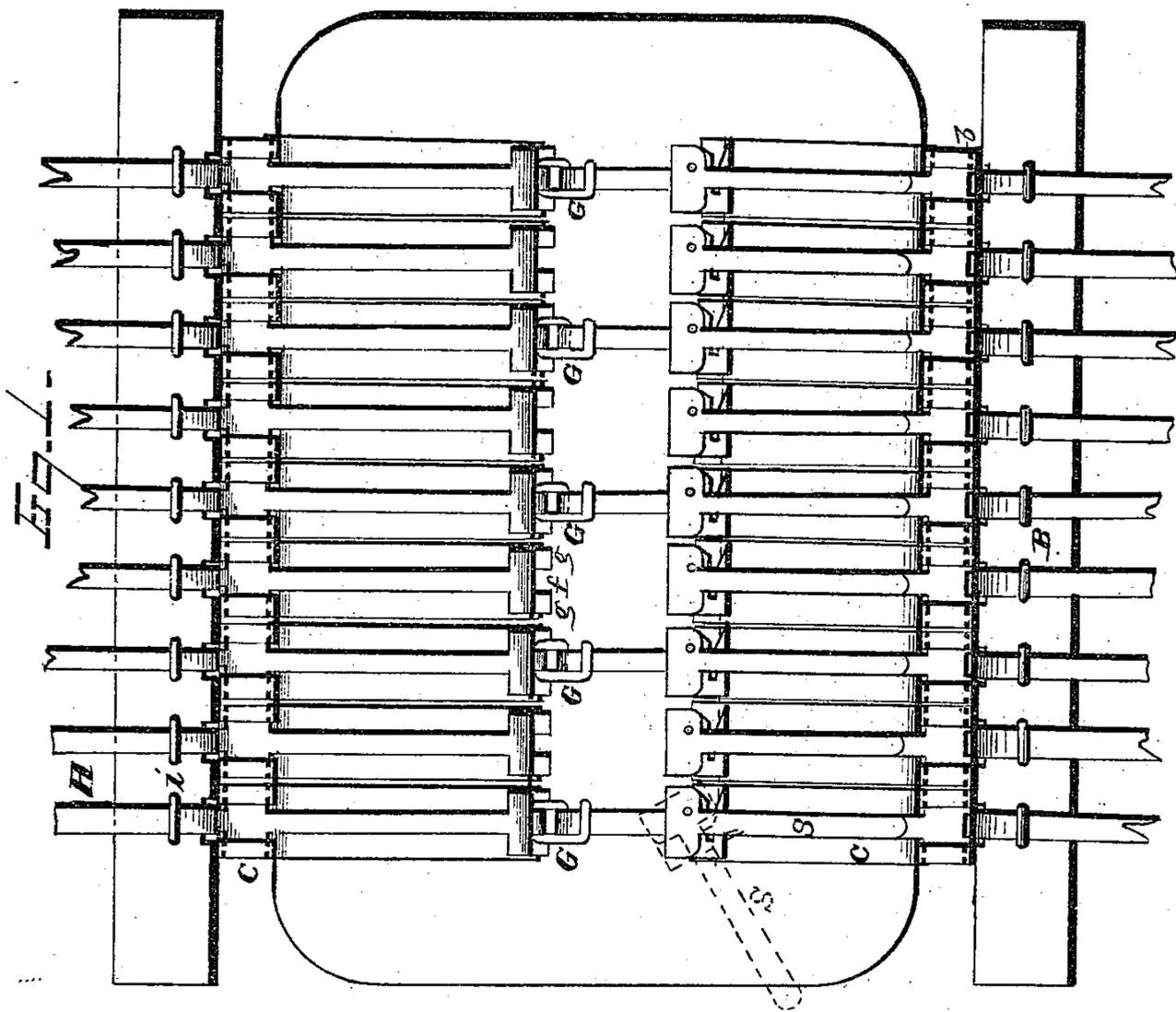


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BALE-BAND TIGHTENER.

No. 189,325.

Patented April 10, 1877.



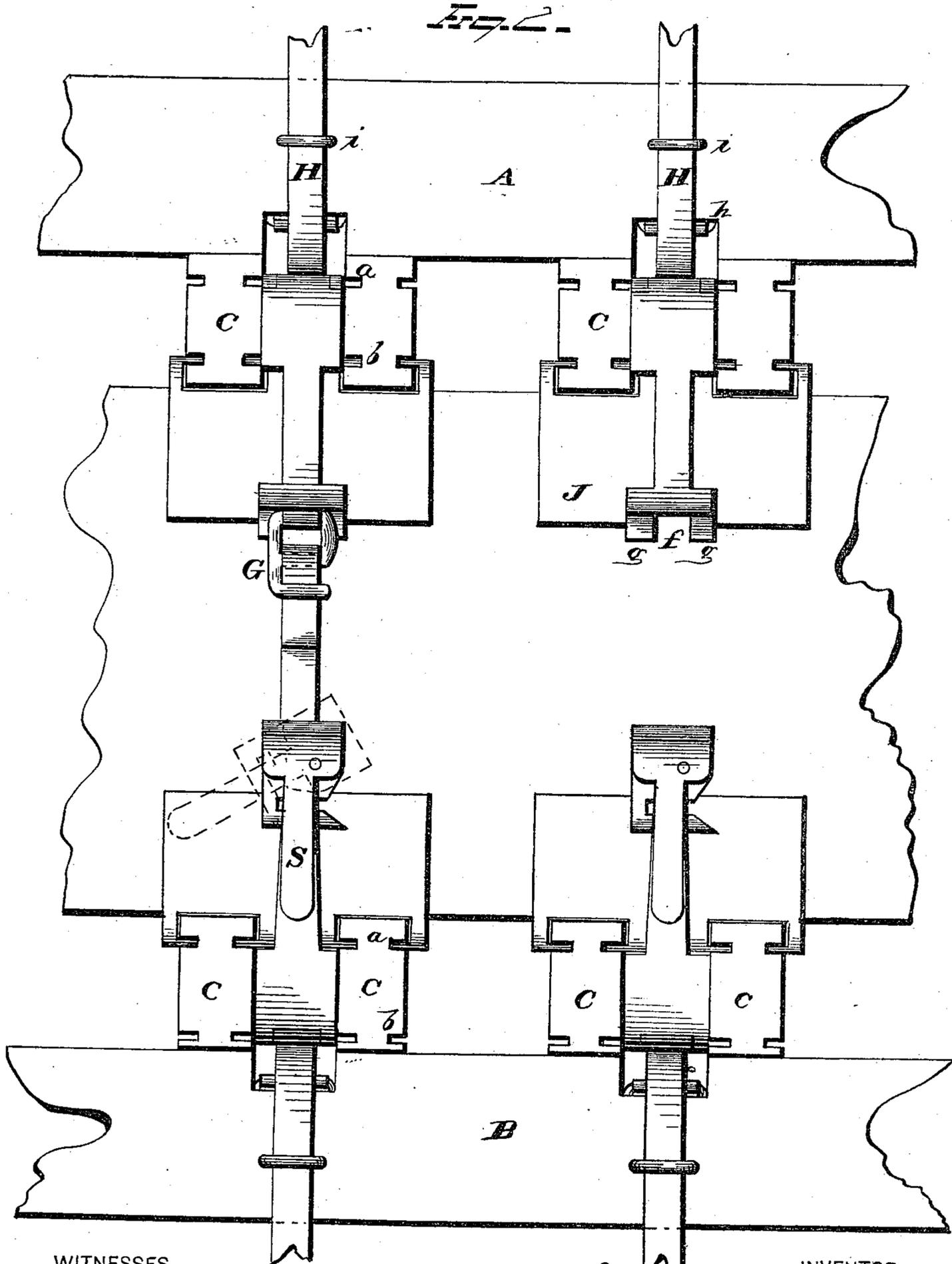
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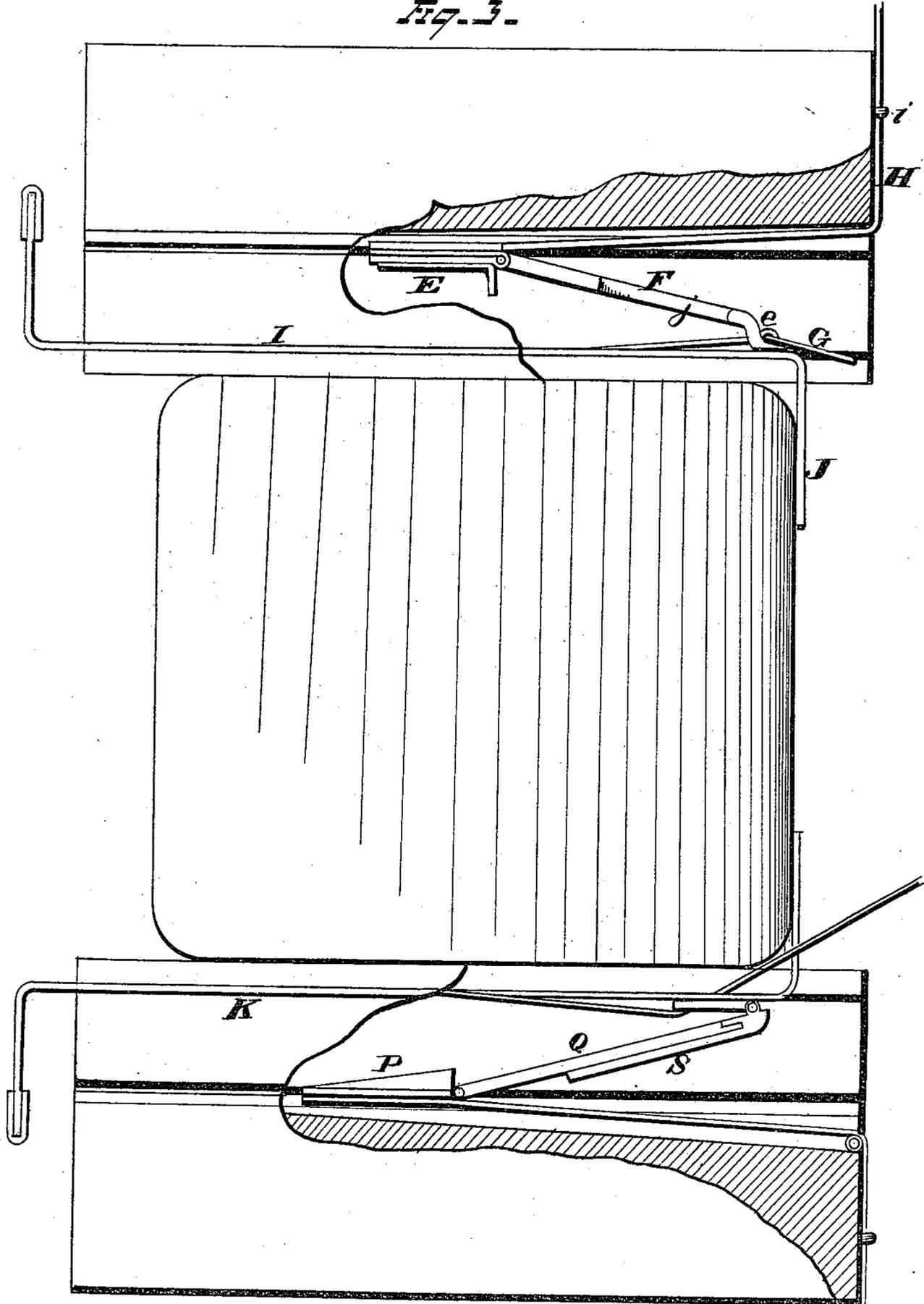
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Fig. 3.



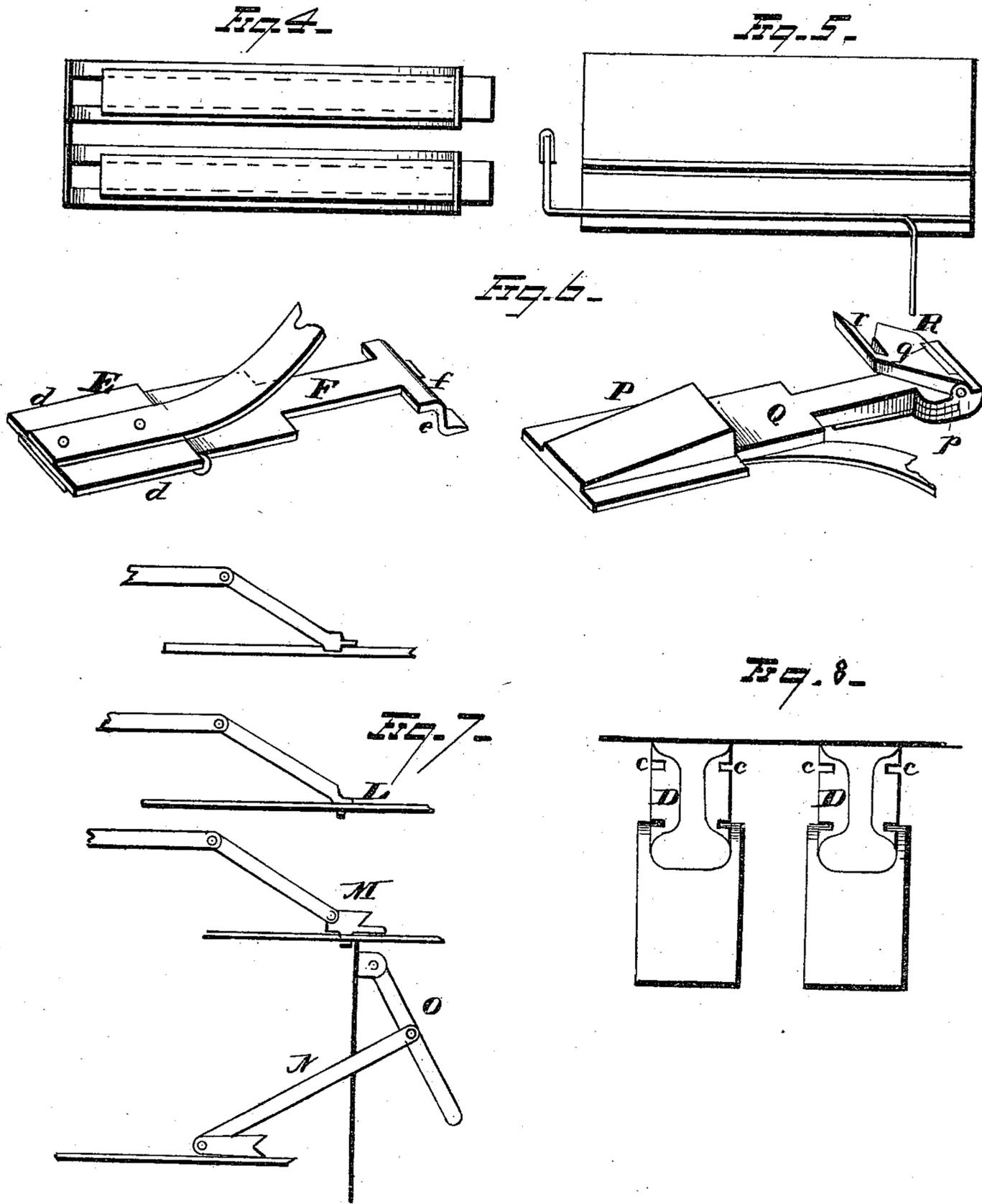
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UNITED STATES PATENT OFFICE.

JOHN L. SHEPPARD, OF CHARLESTON, SOUTH CAROLINA.

IMPROVEMENT IN BALE-BAND TIGHTENERS.

Specification forming part of Letters Patent No. **189,325**, dated April 10, 1877; application filed March 13, 1877.

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 certain improvements in bale-band tighteners for cotton-presses, the object of the same being to provide the platens of presses with means whereby the slack band may be taken up both at the top and bottom of the bale, and the ends of the bands forced toward each other and held in position while the free end of the band is secured to the buckle.

The invention consists, first, in a slide adapted to travel in the channels or grooves formed between the adjacent rails secured to the face of the platen, said slide having a band or buckle clamping-bar hinged thereto, whereby the clamping-bar may be secured either to the band or buckle within the channel of the platen; and as the slide is drawn forward the slack band is taken up, and the clamping-bar carries the buckle or band from a horizontal to a vertical position, where it is retained until the ends of the band are secured; second, in the combination, with a slide having a band or buckle clamping-bar hinged thereto, of a strap or chain, one end of which is secured to the slide while the opposite end is confined to the side of the platen and tightened by any desired mechanism; third, the combination, with the slide and clamping-bar, of a sliding frame, whereby the tightening mechanism is adapted for use on bales of varying widths.

In the drawings, Fig. 1 is a front view of the platens of a cotton-press, provided with my improved band-tightener. Fig. 2 is an enlarged section of Fig. 1. Fig. 3 is a view, partly in section, showing the position of the several parts, as the clamping-bar is secured

to the buckle. Fig. 4 is a plan view of a portion of the face of the platen. Fig. 5 is a side view of the platen, showing the sliding frame secured thereto. Fig. 6 is a detached view of the slides and clamping-bars. Fig. 7 shows modified forms of clamping-bar. Fig. 8 shows a section of an ordinary platen provided with my improved band-tightener.

A represents the upper, and B the lower, platen of the press. C are rails secured to the faces of the platens.

In a newly-constructed press the rails may be rectangular in form, and provided with upper and lower grooves *a b*, as shown in Fig. 1. When it is desired to apply my improvement to presses as ordinarily constructed, filling-pieces D are secured to the rails, said pieces having grooves *c* formed therein, as shown in Fig. 8. E designates the slide, which is provided with flanges *d*, which latter fit the upper grooves *a* in the rails, and allow the slide to be readily moved backward and forward within the channel or groove between the rails. If desired, anti-friction rollers may be journaled in flanges *d*, and grooves *a* made of sufficient depth to constitute a track, upon which said rollers may travel, and thereby decrease the friction between the moving parts of the machine. To one end of slide E is hinged a buckle-clamping bar, F, the forward end of which is bent downwardly at an angle to the main body of the bar, as shown at *e*, which portion is slotted at *f*, forming two projecting prongs, *g*. The end of the band, provided with the buckle G, is placed in the groove between the rails from the front face of the upper platen, and the band inserted in the opening *f* in the clamping-bar, while the buckle rests upon the prongs *g*, the sides of the buckles having bearing against the angular depression of the bar.

To the upper surface of slide E is rigidly secured a chain or band, H, which latter passes over an anti-friction roller, *h*, secured to the face of the platen, and from thence through a staple, *i*. The end of the band or chain may be secured to a lever fulcrumed to the platen, or the several bands or chains of each platen may be secured to a horizontal shaft support-

ed in bearings secured to the face of the platen, the end of said shaft to be provided with a pinion which shall engage with the internal gear of a hand-wheel. There are many different methods of applying power to pull the slide toward the face of the platen, and hence I do not limit myself to any particular arrangement of devices for effecting this result.

I represents a sliding or equalizing frame or face plate, which is adapted to slide back and forth in grooves *b* of the rails. In order that the front sections of frame I will always be on the same plane, the rear portion of the frame is rigidly secured by a cross-bar, thereby making the several front plates of the frame move in unison with each other. The front plates J extend downwardly any desired distance. This frame enables the band-tightener to be operated on bales of different widths, and is manipulated as follows: After the bale has been compressed the front plates of sliding frame I are forced backwardly against the bale. The slide having been inserted in the grooves between the rails, and forced backwardly therein as far as desired, the band is placed in the opening in the forward end of the clamping-bar while the buckle rests upon the prongs *g*.

The lower portion of prongs *g* rests upon the guides *i* of the equalizing-frame I. As the clamping-bar is drawn forward the prongs *g* will travel over the curved portion of the frame, and in their descent having a firm and unyielding bearing on the edges of the front plates of the sliding frame. The shank or body portion *j* of clamping-bar F is narrower than the opening between the plates referred to, so that a portion of the bar may pass between said plates when the bar is carrying the end of the band from a horizontal to a vertical position.

The lower platen is furnished with a sliding frame, K, similar in construction to the frame applied to the upper platen. The clamping-bars of the lower platen have band-clutches secured to their forward ends, which operate to clutch the band when a forward movement is imparted to the slide.

There are many different methods of constructing band-clutches; but the one I prefer to employ is shown in the drawings, wherein the slide P has a bar, Q, hinged thereto. The forward end of the bar Q is provided with a bearing-plate, *p*, to one end of which is pivoted the band-clutch *q*, which consists in a plate, R, having a slot, *r*, formed therein for the insertion of the band. Plate R is hinged to the forward end of a hand-lever, S. When the slide is inserted in the channel the lever S is placed in line with the bar Q. After the bars have been forced toward each other, and the end of the band secured within the buckle G, the band-clutch is readily released from the band by moving the lever sidewise, which movement releases the band from the clutch.

Instead of constructing the clamping-bar F, to operate as above described, the edges of the frame-guides may be grooved, as shown in Fig. 7, and the prongs have lugs, projections, or rollers formed thereon or attached thereto, to travel within such grooves, and thereby keep the prongs in close contact with the sliding frame during any position of the slide. The same effect can also be accomplished by forming grooves on the inner sides of the prongs, and placing the frame-guides within said grooves, as shown at L, in Fig. 7.

Again, the buckle or band clamping-bar, instead of being formed of a single bar, may be jointed near the clamp, as shown at M, Fig. 7, which construction allows the bar a greater range of adjustment than in the form first described. Again, the slide may be dispensed with altogether, and the clamping-bar pivoted to a link, N, (shown in Fig. 7,) the opposite end of the link being pivoted to a lever, O, by means of which the bar is forced into the channel when it is desired to attach the band or buckle thereto, which operation having been completed the lever O is raised, and operates to withdraw the buckle from the channel.

By the employment of a band-tightener, constructed in accordance with my invention, all slack band may be taken up, as the clamping-bar is secured to the buckle and band above and below the bale, and the ends of the band drawn forward and over the sides of the bale, where they are held in position while the band end is secured to the buckle.

It is evident that various changes may be made in the several details of construction and arrangement of parts without departing from the spirit of my invention, and hence I do not limit myself to the exact construction shown; but

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

1. The combination, with the rails attached to the platens of a cotton-press, said rails having grooves formed therein, of a slide having a buckle or band clamping-bar hinged thereto, said slide constructed to fit within the grooves in the rails, substantially as and for the purpose set forth.

2. The combination, with the rails attached to the platens of a cotton-press, said rails having grooves formed therein, of a slide having a buckle or band clamping-bar hinged thereto, and a band, chain, or lever secured to said slide, substantially as and for the purpose set forth.

3. The combination, with the rails of a press-platen, of an equalizing-frame, substantially as and for the purpose set forth.

4. The combination, with grooved rails secured to the face of a press-platen, and a slide having a clamping-bar hinged thereto, of an equalizing-frame, the front plates of which

are formed to rest against the side of the bale, substantially as and for the purpose set forth.

5. A band-clutch or clamping-bar, consisting essentially in the combination, with a hinged bar, of a clutch pivoted thereto, said clutch provided with an open slot for its attachment to the band, and also with a handle, whereby it may be readily released, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of March, 1877.

JOHN LEEFE SHEPPARD.

Witnesses:

PHILIP B. SHAW,
JULIUS A. BLAKE.