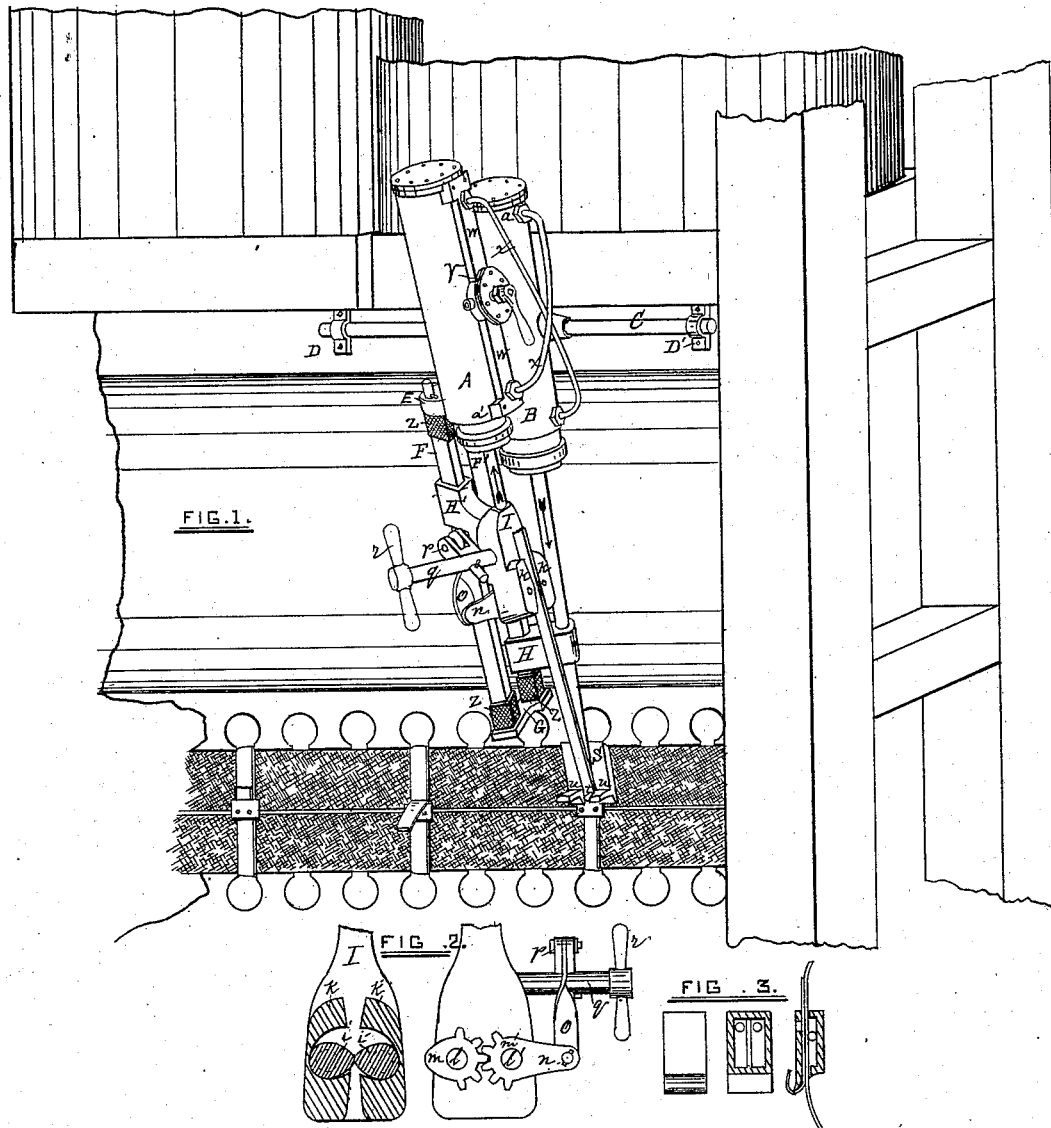


P. N. JOHNSON.
Bale-Band Tightener.

No. 217,224.

Patented July 8, 1879.



WITNESSES.

J. C. Blake
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BY

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PETER N. JOHNSON, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN BALE-BAND TIGHTENERS.

Specification forming part of Letters Patent No. **217,224**, dated July 8, 1879; application filed May 7, 1879.

To all whom it may concern:

Be it known that I, PETER N. JOHNSON, a resident of the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a certain new and useful Improvement in Bale-Band Tighteners; and I do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 represents my invention as applied to a baling-press. Fig. 2 are views of the band-griper; and Fig. 3, views of a tie-plate, which is preferably employed in connection with the apparatus.

This invention relates to that class of presses known as "bale-band tighteners;" and the novelty consists in the combination of two cylinders mounted loosely upon a horizontal shaft and two pistons, with their tightening mechanism, capable of being moved inwardly or outwardly to suit the size of the bale under pressure.

It also consists in the combination of two steam-cylinders having a single feed-valve and a steamway and cross steam-pipes forming connections with opposite ends of the cylinders; and it also consists in the novel construction of a griper, in connection with operating means, as will be hereinafter more fully set forth.

In the annexed drawings, I have represented one or more pairs of cylinders, A B, which are cast or otherwise connected together, and which are suspended from a horizontal shaft, C, that is supported by journal-boxes D D' in the front or rear, or both, of the upper platen of a baling-press.

Each cylinder is provided near its lowest end with a lug, E, in which are securely fitted the upper ends of a pair of guides, F F'. The lower ends of said guides are connected together by a tie-plate, as shown at G. On each of the above-mentioned guides are fitted slides H H', the former secured to the piston-rod of the inner cylinder, and the latter forming a rear projection to the griper I, that is secured to the lower end of the piston-rod of the outer cylinder.

The aforesaid griper is constructed with recessed jaws *k k*, in which are operated a pair

of cams, *i i'*. These are mounted on pins *l l'*, the rear ends of which are furnished with gear wheels or racks, as at *m m'*, one of the latter constructed with an arm, *n*, to which is pivoted the lower end of a link, *o*, forming a connection with an oscillating pin, *p*, that is fitted in a stem, *q*, the latter provided with a handle, *r*, so that the cams may be made to gripe or release the band whenever necessary.

The lower end of the piston-rod of the inner cylinder is provided with a plate, S, having a central slot, *t*, and projections *u u*, in order that it may straddle the band and rest upon the upper edge of the buckle or tie plate.

The outer cylinder, A, is provided with a feed-valve, V, and steamway W, the ends of the latter furnished with pipes *x x*, which cross one another and form connections with the opposite ends of the inner cylinder, B.

The guides F F' are furnished at their ends with rubber bumpers Z, in order to guard against the striking of the cylinder-heads by the pistons.

The manner in which this invention is connected with the press permits of its being moved from band to band, and also allows its lower parts to be swung in or out to suit the size of the bale under pressure.

As the tie shown at Fig. 3 will form the subject of a separate patent, it is not deemed necessary herein to describe the same.

In the operation of my invention, the bands are passed round the bale and through the tie-plate in the usual manner. The plate S, at the lower end of the piston-rod of the inner cylinder, is then placed over the buckle, as shown in Fig. 1, and the free end of the band engaged by the cams *i i* of the griper I. Steam is then admitted into the ends *a a'* of the cylinders, which causes the pistons thereof to move in the direction indicated by the arrow-points.

When all the slack has been taken up the band is secured by the wedging against the same of the balls within the bale tie-plate or buckle, or that end engaged by the griper may be released and bent back, over, or under the buckle, in the usual way.

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

1. In a machine for tightening bale-bands,

the combination of two cylinders mounted loosely upon a horizontal shaft and two pistons, with their tightening mechanism, capable of being moved inwardly or outwardly by swinging on said horizontal shaft to suit the size of the bale under pressure, substantially as described.

2. In a machine for tightening bale-bands, two steam-cylinders having a single feed-valve and a steamway, in combination with steam-pipes *x x*, crossing one another and forming connections with opposite ends of the cylinders, to cause the pistons under force to move in opposite directions, substantially as described.

3. The griper *J*, composed of a pair of cams, *i i'*, pins *l l'*, gear wheels or racks *m m'*, one of

the latter provided with an arm, *n*, which is operated through a link, *o*, oscillating pin *p*, stem *q*, and handle *r*, substantially as shown and described.

4. In combination with a baling-press, two cylinders, *A B*, arranged on a horizontal shaft, *C*, in such a manner that the said cylinders may be moved to the right or left, and their lower ends swung outward or inward, substantially as set forth.

In testimony whereof I have hereunto signed my name.

P. N. JOHNSON.

In presence of—

J. C. CLARKE,
JNO. J. CARTER.