

S. H. GILMAN.
COTTON BALE-TIE.

No. 173,118.

Patented Feb. 8, 1876.

Fig 1.

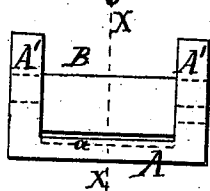


Fig 3.

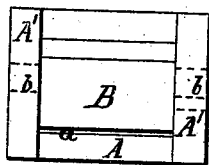


Fig 5.

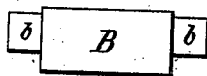


Fig 2.

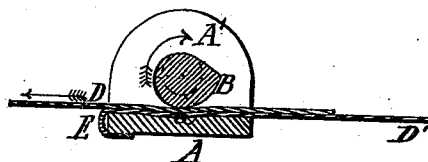


Fig 4.

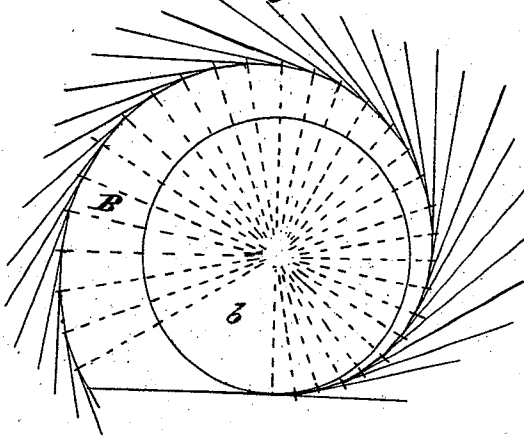
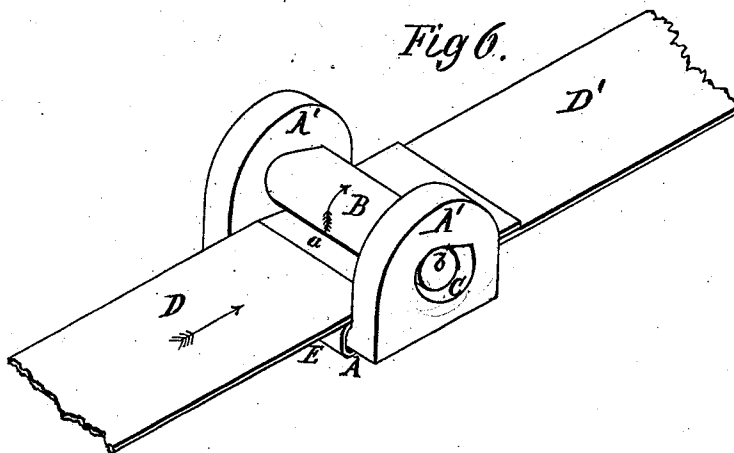


Fig 6.



Witnesses:
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Jno. J. Blaten

Inventor:
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UNITED STATES PATENT OFFICE.

SAMUEL H. GILMAN, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO
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IMPROVEMENT IN COTTON-BALE TIES.

Specification forming part of Letters Patent No. 173,118, dated February 8, 1876; application filed
December 6, 1875.

To all whom it may concern:

Be it known that I, SAMUEL H. GILMAN, of the city of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Cotton-Bale Ties; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a back view of the tie; Fig. 2, a longitudinal section of the tie and cotton-bale band as they appear when used together; Fig. 3, top view of tie. Fig. 4 is a diagram illustrating the mode of producing the cam-surface; Fig. 5, a side view of the said cam and cam-shaft. Fig. 6 is a perspective view, showing the tie and cotton-bale band as in use.

The nature of my invention consists in the peculiar construction and combination of the two parts of which the tie is formed, as herein-after described and specifically claimed, whereby a very strong and simple cotton-bale tie, which is self-fastening, and always sure to bite upon the band, is produced, and also facilities are afforded for the constructing of the parts of the tie separately from one another, and then uniting them together in such a manner that they can be readily separated in the event one of them should become inoperative.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with references to the drawings.

A represents a metal plate, provided upon its sides with upwardly-projecting bearing-flanges A', whose distance apart is to be governed by the width of the bands used for the purpose of baling cotton. This plate and the flanges A' are cast or made in one piece, and the upper surface of the plate between the two flanges is made slightly concave along its width, as shown at *a* in Fig. 2. I prefer to construct this plate about one and one-half inch in width, outside measurement, from flange to flange, and about one inch in length, and of such thickness as will effectually prevent any yielding when it is put in use. The height which the flanges A' project above the

upper or concave surface of the plate may be varied; but I consider about one inch the proper distance. These flanges are provided with proper bearings to receive the journals *b* of the cam-shaft B, which bearings should be so arranged as to bring the cam-shaft B horizontally above the upper surface of the plate A, and at a sufficient distance therefrom to permit the introduction of two thicknesses of a band between the cam-shaft and the plate, as shown at D D' in Figs. 2 and 6. The journal-bearing in one of the flanges A' is enlarged eccentrically, as at C, Fig. 6, to correspond somewhat with the shape of the cam-shaft, for the purpose of allowing the cam-shaft B to be inserted between the flanges, while the journals of the shafts occupy their proper place in the bearings.

It will be observed that the metal is left out of the bearing to give the form as at C, Fig. 6, below the upper point of contact between the journal and bearing, and by this means the certain centering of the cam-shaft upon a line horizontal to the plate, and at right angles to the vertical sides of the flanges, is insured, and a proper bearing for the journal provided, and facilities afforded for introducing the larger or cam portion of the shaft between the flanges, which larger portion of the shaft prevents the shaft getting out of place by falling down by its gravity below the lowest part of the aperture C, or when the cam is gripping upon the bale-band.

The cam portion of the cam-shaft B is of a length equal to the space between the flanges A', and the curve of its periphery starts from the circumference of the journals *b* of said shaft, and its distance increases therefrom in a fixed or uniform ratio, as shown in Fig. 4 of the drawings, or so that in every arc of ten degrees one of the radii passes out of the cam-curve at the point where a perpendicular line from the other intersects it. The cam-curve should pass about the shaft B until it meets the tangent of the radius from which it started, as clearly shown in Fig. 4. At an angle of ten degrees or less the contact-point of the cam-curve will always jam on the band, and be carried with it until the space is filled; but at

a greater angle the cam will not hold, but allow the ends of the band to slip on one another, or on the plate below.

The operation of my improved bale-tie is as follows: One end of the bale-band is turned down or doubled over, forming a hook, as shown at E, Fig. 2, and this end of the band is passed through the space between the cam B and plate A, as shown in said figure, and the other is carried around the bale and passed through the space remaining between the end first inserted and the cam-shaft and cam, and while it is drawn tight on the bale the cam of the shaft is pressed snugly down upon the two ends of the band. This being done, and the band set free, one end of the band slips back on the other, and by this retraction of the band the cam-shaft is drawn partly around, and the cam presses down upon the band with such force as to bend the ends thereof, and press them down into the concave surface *a* of the plate A, as shown in Figs. 2 and 6 of the drawings. Thus, the tie is securely fastened upon the band, and the two ends of the band held firmly together.

To unhook or unloose the tie, it is only nec-

essary to slack the band slightly, when the cam-shaft and cam may be turned up, and the ends of the band easily drawn out, leaving the tie ready to be again used for a similar purpose.

I am aware of the expired patent of Hughes, granted in 1859, and do not claim anything therein shown; but

What I claim is—

1. The cotton-bale-tie cam B, and its shaft formed with it, in combination with the flanged plate A and A' A', one of the flanges of said plate having an elongated curved passage through it, substantially as and for the purpose described.

2. The combination of the flanged plate A and A' A', made with a concave surface, *a*, and the cam and its shaft, substantially as and for the purpose described.

In testimony that I claim the foregoing as my invention, I hereunto set my hand in presence of two witnesses.

SAMUEL H. GILMAN.

Witnesses:

JAS. A. LAFITTE,

W. A. S. WHEELER.