(No Model.) 2 Sheets—Sheet 1.

G. TAYLOR.

COTTON COMPRESS.

No. 395,857. Patented Jan. 8, 1889.

Fig. 1

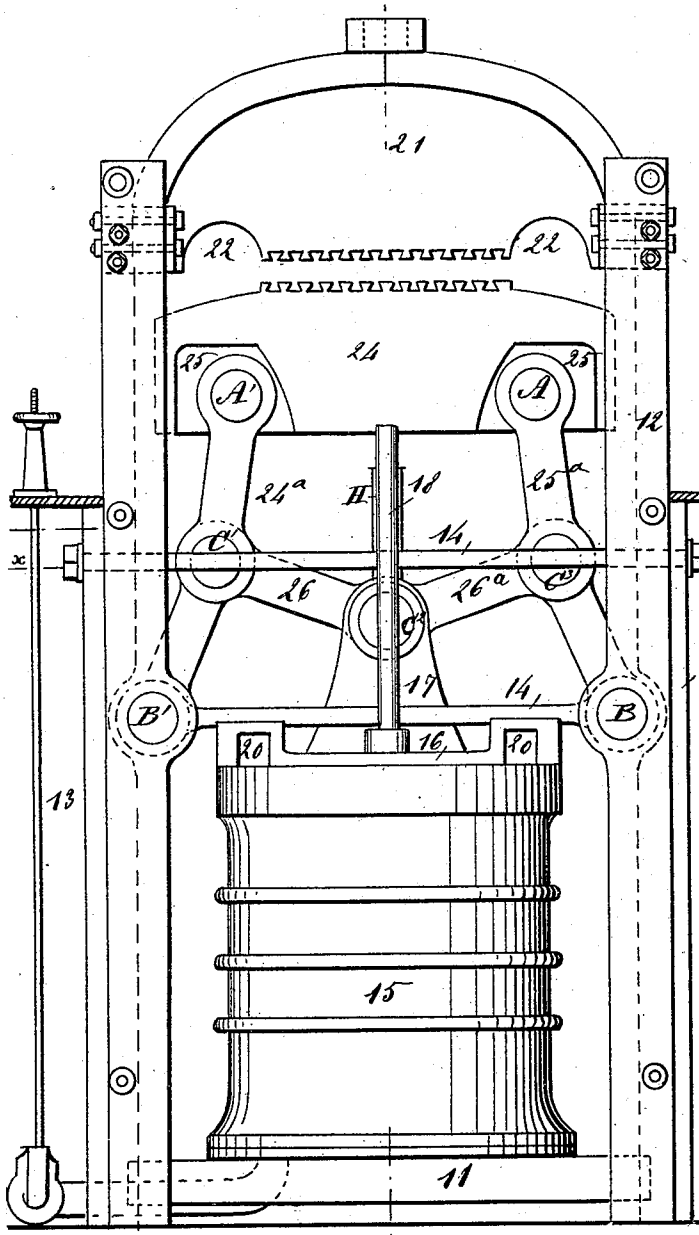
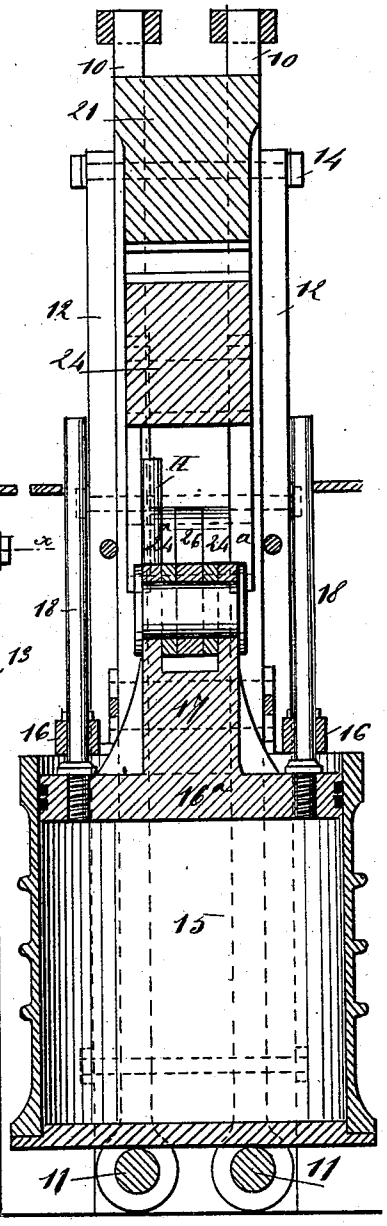


Fig. 2



WITNESSES:

C. Neveux

C. Sedgwick

INVENTOR

G. Taylor

BY

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ATTORNEY.

N. PETERS. Photo-Lithographer, Washington, D. C.

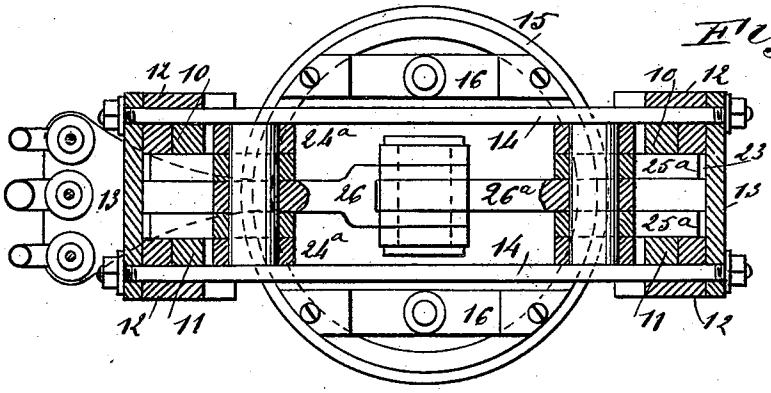
(No Model.) 2 Sheets—Sheet 2.

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Fig. 3



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UNITED STATES PATENT OFFICE.

GEORGE TAYLOR, OF HILLSBOROUGH, TEXAS.

COTTON-COMPRESS.

SPECIFICATION forming part of Letters Patent No. 395,857, dated January 8, 1889.

Application filed April 12, 1888. Serial No. 270,398. (No model.)

To all whom it may concern:

Be it known that I, GEORGE TAYLOR, of Hillsborough, in the county of Hill and State of Texas, have invented a new and Improved Cotton-Compress, of which the following is a full, clear, and exact description.

My invention relates to an apparatus for compressing bales of cotton and for similar purposes, and has for its object to provide a simple and efficient device and to secure economy in power and in construction.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the apparatus. Fig. 2 is a central vertical section. Fig. 3 is a horizontal section on line $x\,x$ of Fig. 1.

In carrying out my invention the frame of the apparatus consists of the spaced vertical side bar, 10, the approaching bars of each set being connected at the base by transverse rods or beams 11, and the upper ends of said rods are arched to meet centrally and secured at that point in any suitable manner. To the outer faces of the side bars angle-plates 12 are bolted or otherwise secured, extending from the base perpendicularly upward to the spring of the arch, the extremities of the several members of the angle-plates being flush with the inner surfaces of the side bars, as best shown in Fig. 3. The space intervening the contiguous edges of the side bars and angle-plates upon opposite sides of the apparatus from the base to a point above the center is inclosed by a plate, 13, which plates also serve the purpose of a tie. The frame is strengthened against lateral pressure or displacement by two or more transverse rods, 14, passing, preferably, through the facing-plates 13, as illustrated in Figs. 1 and 3. The ends of the lower bars 14 have eyes through which the centers or pivots B B′ pass, and therefore said bars tie the centers firmly together.

Upon the base within the frame a cylinder, 15, is supported, provided with properly-applied steam inlet and exhaust pipes, and in said cylinder a piston, 16^a, is adapted to slide, having projecting upwardly, and preferably centrally, from the outer face a post, 17.

The piston 16^a is provided with upwardly-projecting guide-rods 18, which pass through bearings in the cross-bars 16, which are secured on the upper open end of the cylinder. These cross-bars 16 are offset on their lower sides to form the recesses 20. These recesses allow the packing to be raised above the cylinder for cleaning or repairing without the necessity of removing the piston. This feature, however, forms no part of my invention, and need not, therefore, be further described.

In the arched portion of the frame the upper platen, 21, of the press is rigidly secured, the upper surface of which platen is made to conform to the arched contour of the frame and the lower sides to fit snugly between the approaching bars and angle-plates, the outer surfaces of the platen being flush with the corresponding surfaces of the said angle-plates. The arched surface of the platen is preferably grooved to receive the bale-bands, and at or near the ends provided with a concavity or concavities, 22, to facilitate the withdrawal of the operator's head or person and manipulation of the sewing device.

In the ways 23, formed by the united angle-plates, platen, and side bars, a lower platen, 24, is held to slide, the upper surface of which is beveled or recessed opposite the concavities in the fixed platen, and grooved to receive the bale-bands in similar manner, as best shown in Fig. 1.

In the outer faces of the sliding platen, which are flush with the outer faces of the angle-plates, and near the ends, a recess, 25, is produced, in which, respectively, one end of a toggle-lever, 24^a and 25^a, is pivoted, the other end of said toggles being pivotally connected to the angle-plates. Thus opposing sets of toggle-levers are provided, one set connecting each end of the sliding platen with the frame. The duplicate sets of toggles 24^a and 25^a are each united to the stud 17 of the piston by single links 26 and 26^a.

The links 26 and 26^a are each pivoted at

one end centrally to and between each set of toggles and at the other end directly to the post 17, as illustrated in Fig. 3.

In operation, as the piston is forced up, the said piston, acting directly upon the toggle-levers through the links, thereby straightens the former or carries their articulate centers outward, which action propels the sliding platen upward. When the steam is exhausted from the cylinder and the piston descends, the sliding platen follows.

One of the chief dangers of toggle-joint compresses heretofore has been the liability of the toggles jumping the center—that is, there is a tendency, on account of the immense power exerted, of the levers 25^a and 24^a and links 26 and 26^a passing beyond a straight line, and thus locking the bale of cotton between the two platens 21 and 24. To obviate this difficulty, I make the links 26 and 26^a just the right length to push the levers 24^a and 25^a to a little short of a straight line between the centers A B and A′ B′; in other words, these links or toggles 26 and 26^a are too short when pushed by the pistons to a straight line between centers C′, C^2, and C^3 to push the levers 24^a and 25^a beyond their center or past a straight line. This reduces the aforesaid difficulty by preventing the links 26 and 26^a from passing beyond the center. The piston 16^a travels considerably faster than the lower platen, 24, and as the post 17 is attached to the piston it travels at the same speed. I insert in a socket provided for the purpose in the upper end of the post 17 a large iron rod, H, that is just the exact length of the distance between the top of said post 17 and the under side of the lower platen, 24, when the levers 24^a and 25^a are nearly on a straight line. Thus as the post 17 is attached to piston 16^a, which travels, as aforesaid, faster than the platen 24, this rod H will strike the under side of said platen before the levers 24 and 25^a straighten, effectually preventing the levers passing beyond longitudinal axial alignment, whereby the possibility of the bale being locked between the platens is removed.

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

1. The combination, in a cotton-compress, of the frame comprising vertical spaced angle-bars 12, the inner vertical spaced bars, 10, within the angles of said bars 12 and curved inwardly at their upper ends and there secured together to form the arch, and the tie-rods 14, with the upper platen, 21, curved to correspond to the said arch and bolted in the upper end of the frame, the lower platen working at its ends in the ways formed between said spaced bars 12 10, the cylinder, the piston, and the toggle-levers connecting the piston and lower platen, substantially as set forth.

2. The combination, in a cotton-compress, of the frame comprising vertical spaced angle-bars 12, the spaced bars 10 within the angles of the bars 12 and curved inwardly at their upper ends to form the arch, the base-rods 11, the upper and lower tie-rods 14, said lower rods having eyes at their ends between the inner adjacent faces of the spaced bars 10 12, and the toggle centers or pivots B B′, mounted in the sides of the frame at or near the upper end of the cylinder and passing through the eyes on said lower tie-rods, with the upper platen bolted in the said arch, the lower platen sliding in the ways formed by the spaces between said vertical bars 10 12, and having the pivots or centers A A′, the toggle-levers 24^a 25^a, journaled at their opposite ends on said centers A A′ B B′, and the links 26 26^a, pivotally connected with the inner pivoted ends of the levers 24^a 25^a, the cylinder, and the piston having a vertical central post, 17, to the upper end of which the inner ends of the said links are pivotally connected, substantially as set forth.

GEORGE TAYLOR.

Witnesses:
W. N. SMALLEY,
JAS. S. MANLY.