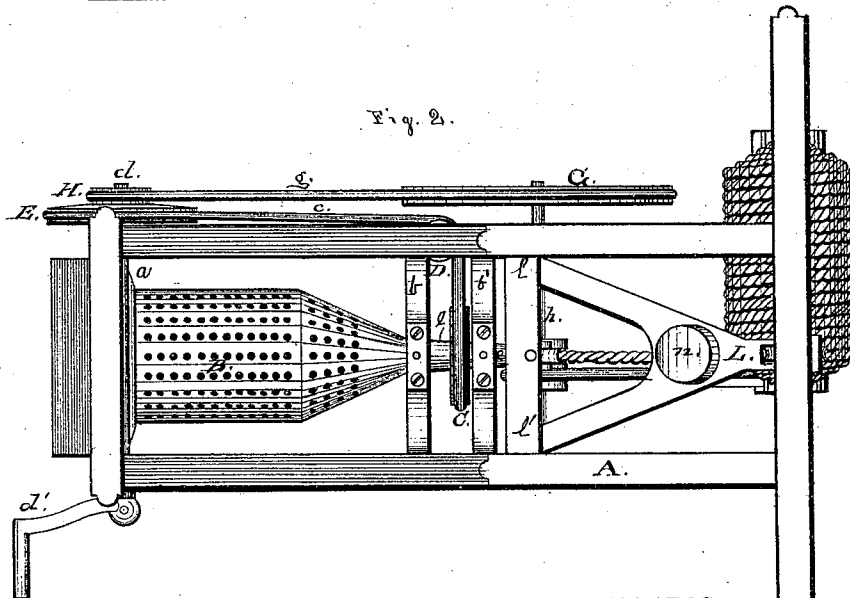
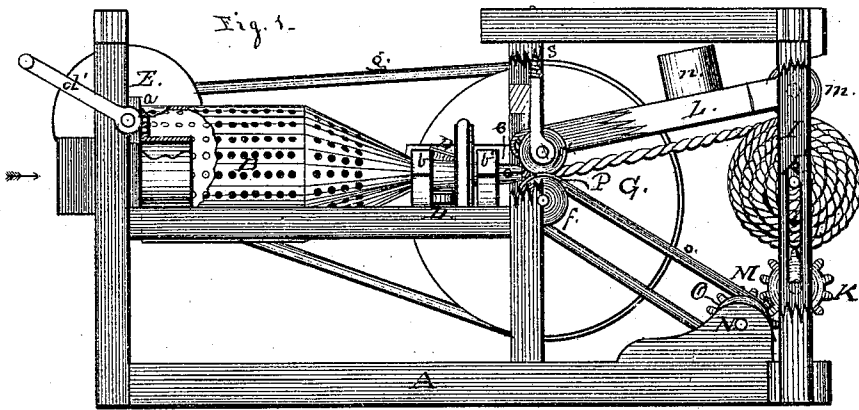


J. A. DRAKE.

APPARATUS FOR PACKING AND BALING COTTON.

No. 179,848.

Patented July 18, 1876.



WITNESSES.

INVENTOR.

James C. Heddell
H. M. Jenkins

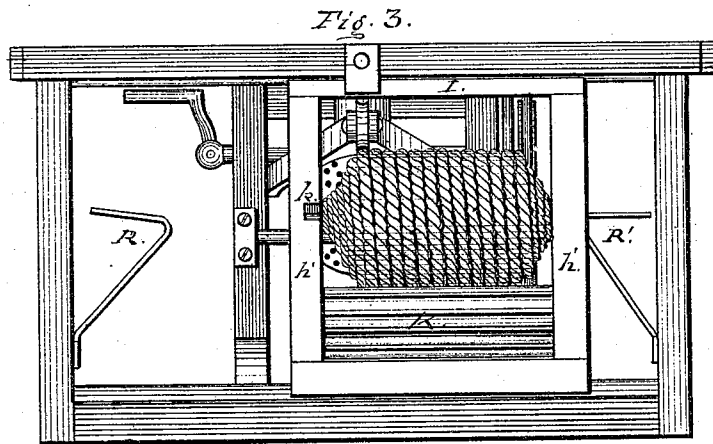
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UNITED STATES PATENT OFFICE.

JAMES A. DRAKE, OF NEW ORLEANS, LOUISIANA, ASSIGNOR OF ONE-SIXTH OF HIS RIGHT TO EDGAR C. SINGER, OF HOUSTON, TEXAS.

IMPROVEMENT IN APPARATUS FOR PACKING AND BALING COTTON.

Specification forming part of Letters Patent No. **179,848**, dated July 18, 1876; application filed April 17, 1873.

To all whom it may concern :

Be it known that I, JAMES A. DRAKE, of the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a new, useful, and Improved Process and Apparatus for Baling Cotton; and I hereby declare the following to be a full, clear, and correct description of the same, reference being had to the accompanying illustrative drawings, forming a part of this specification.

My improvement relates to a mechanical device by means of which I am enabled to take raw cotton, as it comes directly from the ginning-mill, and thoroughly pack or compress the same into suitable bales or packages for handling, shipment, and transportation to a market without the necessity of employing canvas bagging, bale-ties, and buckles. This result is accomplished by my improvement, which is simple, cheap, and of easy construction, to an extent of pressing more cotton into a given space than can possibly be effected by the most powerful compressing devices or engines hitherto known and in general use at the present time, whereby I am enabled to economize both in the cost of baling, as well as in that of transportation. For the reasons above stated my improvement becomes of great utility and importance, not only to cotton-planters, but to the public in general.

My invention will, however, be more clearly understood by reference to the drawings, whereon the same is shown on Sheet 1, at Figure 1, by a side elevation, partly in section; at Fig. 2 of the same sheet by a plan or top view; and on Sheet 2, at Fig. 3, by an end or front view.

Similar letters of reference indicate corresponding parts of the device shown on both sheets and in all the figures of the drawings.

A is a substantial frame-work, constructed of wood, iron, or any other suitable material, which furnishes bearings for the working parts of my invention. B is a sheet-metal hollow twirling cylinder, having its forward part conically contracted and gradually terminating in a small slotted delivery-tube, while the internal diameter of a portion of the said twirling cylinder is diminished by an interior cylinder. The said external and the said in-

ternal cylinders are connected by a base-plate, as shown at *a*, which plate, as likewise the periphery of the external cylinder, is finely perforated, as shown, for purposes hereinafter described.

The said cylinder B is supported by and rotates in the journal-bearings resting upon the cross-frames *b b'*.

The cotton as it is forced or blown from the ginning-mill is delivered directly into the said twirling cylinder B, through the rear open end thereof, and rapid rotary motion is communicated to the said cylinder through and by means of the pulley C, guide-pulleys D D', belt or rope *c*, and driving-pulley E. The said pulley E is keyed upon the end of the shaft *d*, which may be turned by hand-power applied to the crank *d'*, or the same may be driven by animal, steam, or other motive power applied in any convenient manner found most expedient.

The rapid revolutions of the said cylinder B, effected as above described, necessarily impart rotary motion to that part of the cotton which is being held by and delivered from its contracted extremity, (shown at *e*.) This contracted extremity is slotted, as shown and as before-mentioned, to subserve the important purpose of admitting the contraction and expansion of its internal diameter to the end of accommodating thereby any deviation or inequality in the diameter of the twisted cotton delivered therefrom. As the cotton is delivered from the said nozzle or extremity of the cylinder B it is caught between the grooved rollers or pulleys *f* and *f'*, and prevented from further twisting thereby, the former being stationary upon the axle *h*, while the latter, by means of the spring *s*, is automatically and vertically adjustable to any irregularity of the strand of twisted cotton passing between them.

Motion is imparted to the pulley *f*, and consequently to the pulley *f'*, by the friction of the passing cotton, by means of the large pulley G, which is keyed to the same shaft as that upon which is placed the said pulley *f'*, the said pulley G being connected by the band or rope *g* with the pulley H, which is placed upon the outer extremity of the aforesaid shaft *d*,

to which motion is imparted, as before mentioned. I is a sliding or traversing frame, having the upright standards *h* and *h'*, in the slotted grooves *i* and *i'* of which rotates the axle *k*, upon which is spirally wound and pressed the twisted cotton as it comes from the twirling cylinder aforesaid. K is a corrugated cylinder, either of wood or other suitable material, which, as it revolves, is brought into contact with, and thereby imparts rotary motion to, the spool or package of twisted cotton accumulating upon the said axle *k*. L is a frame, pivoted at *l* and *l'*, and provided at its other extremity with the pulley *m*, the grooved face of which is held down upon the twisted cotton by the weight *n* as the cord is being wound upon the said accumulating package.

The process of spirally winding the twisted cord of cotton in regular layers, as above described, especially when it is weighted, as above stated and shown, will obviously produce the alternate traversing motions of the said sliding frame I, and consequently that of the bale of cotton resting thereupon.

The rotary motion is imparted to the said corrugated cylinder K by means of the toothed pinion M upon the shaft N, which is provided with the pulley O, the latter being connected by the band *o* with the pulley P placed upon the aforesaid shaft *h*, which motion is communicated as before described.

R and R' are springs, against which the sliding frame is pressed, and from which it receives material assistance in starting from its limit of traversing motion.

It is clearly evident that, instead of the frame I being allowed to traverse for the purposes described, the same could be made stationary, and the weighted frame L could be made to traverse for the accomplishment of the same object; and I hereby reserve the privilege of adopting this mode of construction, should experience in the practice of the invention demonstrate that it is expedient to do so.

The perforations in the periphery of the

twirling cylinder B, as well as those in the plate *a*, aforesaid, subserve the purpose of furnishing free exit to any dirt or dust which may, and which usually does, exist to a greater or less extent in cotton as gathered from the plantation, while likewise admitting the free exit of the air which enters the said cylinder with the cotton, and the air so entering operates to maintain the cotton, as it were, in a continuous core in the center thereof, and entirely free from contact with its sides.

Another peculiar feature of the perforated twirling cylinder, which experience with a working machine has demonstrated, is that in rotating it has the effect of straightening out and placing in parallel position the fiber of the cotton therein placed, rendering it in that condition less liable to injury when subjected to the twisting and pressing operations necessary for packing into bales, as herein described.

I make no claim to the bale produced by the mechanism herein described, the same being the distinctive subject-matter of an independent application.

Having described my improvement, its construction, and mode of operation, what I claim as new, and wish to secure by Letters Patent, is the following:

1. The perforated twisting cylinder B, having its forward section conically contracted and terminating in a narrow delivery-tube, the whole constructed and arranged to operate, substantially as described.

2. The twisting perforated cylinder B, and the grooved-faced rollers *f f'*, the same being combined and arranged to operate substantially as described.

3. The twisting cylinder B, rollers *f f'*, corrugated roller K, and weighted frame *h*, the whole being combined and arranged to operate substantially as described.

JAMES A. DRAKE.

Witnesses:

JAMES C. KIDDELL,
H. N. JENKINS.