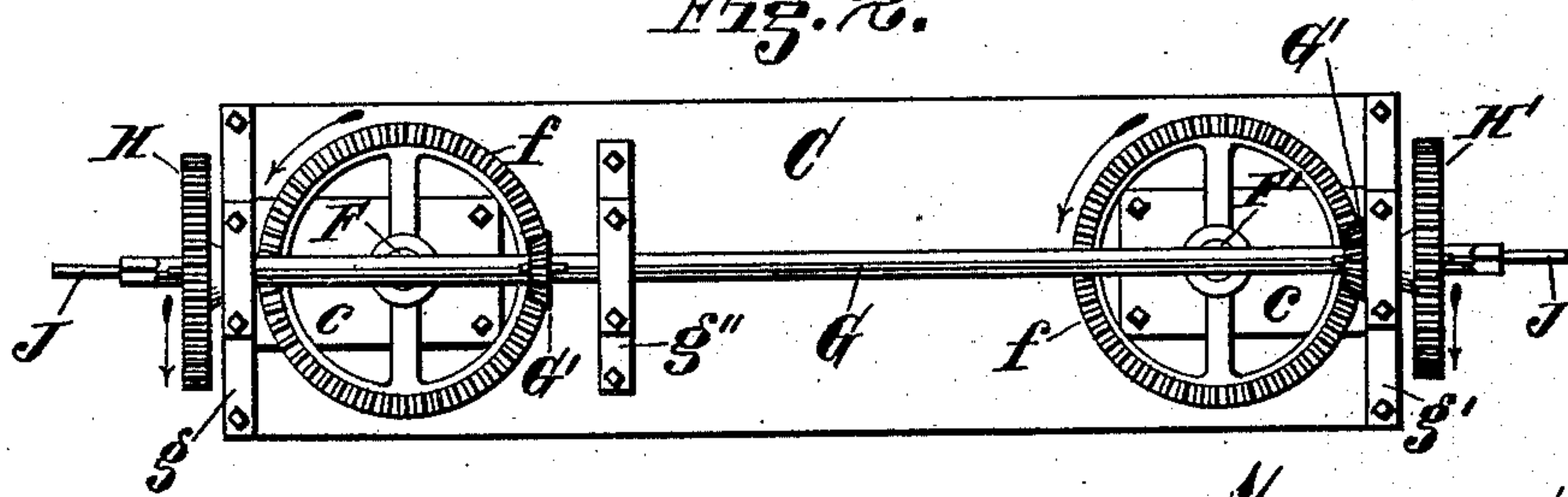


2 Sheets—Sheet 1.

No. 410,046.

Patented Aug. 27, 1889.



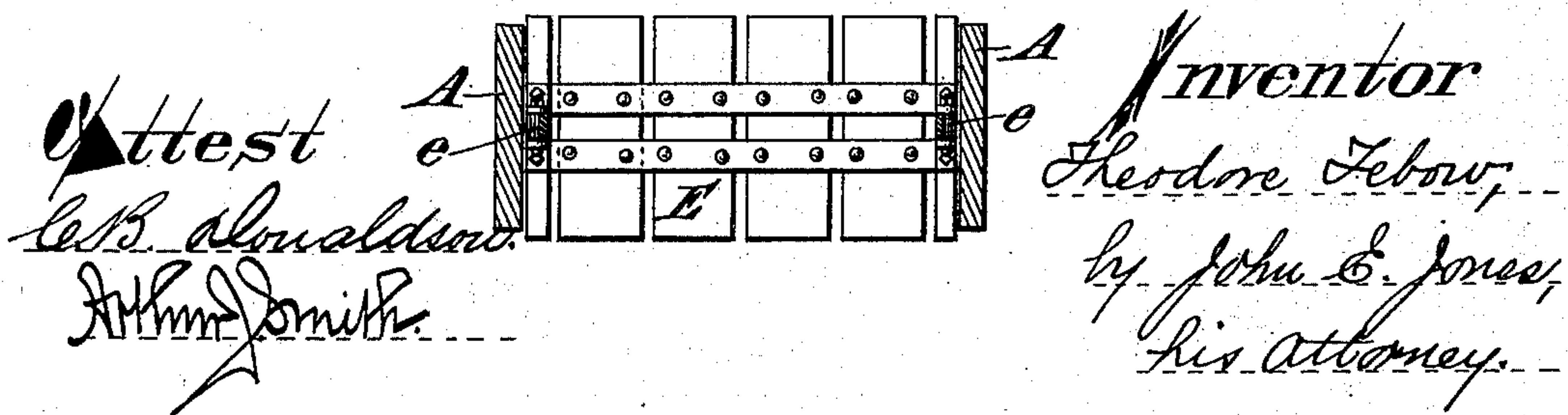
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C.B. Ronaldson.  
Arthur Smith.

*Inventor*  
*Theodore Lebow,*  
*by John C. Jones,*  
*his attorney.*

2 Sheets—Sheet 2.

No. 410,046.

Patented Aug. 27, 1889.





# UNITED STATES PATENT OFFICE.

THEODORE TEBOW, OF NICHOLASVILLE, KENTUCKY.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 410,046, dated August 27, 1889.

Application filed May 29, 1889. Serial No. 312,595. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE TEBOW, a citizen of the United States, residing at Nicholasville, in the county of Jessamine and State of Kentucky, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

My invention relates to presses for baling hemp, flax, cotton, hay, and like articles of commerce, or more particularly to the mechanical movements embodied in such machines for reducing the bulk of said fibrous commodities by great pressure, ready for tying into bales, all of which will be fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of the machine embodying my invention, the arrows therein indicating the direction of movement of the several parts adjacent thereto in the operation of the press in connection with the material; Fig. 2, a plan view of the same; Fig. 3, a side elevation of the same; Fig. 4, a broken sectional elevation showing the upright winding shafts or pillars, the upright frame-bars, and the follower of the press; Fig. 5, a sectional plan showing the adjustable upper bracing-board or abutment-bars and the upright frame-bars; Fig. 6, a broken sectional plan, on line *xx* of Fig. 1, of one end of the follower and its operating sheave and rope mechanism; and Fig. 7, a detail broken elevation of the lower end of one of the winding shafts or pillars, showing the manner in which the rope is wound upon it in the operation of the press.

*A A* represent the upright sides or frame-bars of the press, *B* the bed or base, and *C* the upper cross-member or frame-bar supported by said bars *A A*.

*a a'* are the folding drop-doors hinged in a suitable manner, as shown in Figs. 1 and 3, at the front and rear of the press.

*b* represents a bracing-bar across the middle of the upper section of each door *a a'*, and *b'* a bracing-bar at the top of each of said doors.

*b'' b''* are pivotal loops or straps at the ends of bars *b*, engaging the ends of the rigid bars *b<sup>3</sup>* on the sides *A A*, to prevent the sides from bulging or spreading out laterally, and *b<sup>4</sup>* are hooks pivotally mounted upon the sides *A A*

and engaging the outer ends of bars *b'*, to firmly hold and support the doors *a a'* during the operation of the machine.

*D* represents the usual press-follower, composed of bars with spaces between them for the introduction of the binding ropes or ties. The several bars of the follower are mounted upon bars or slides *D' D''*, which travel in vertical slots or ways *a''* in the side frames *A A*, with their ends projecting therefrom, as clearly shown in Figs. 1, 3, 4, and 6.

*D<sup>3</sup>* is a longitudinal filling bar or timber intermediate the two slides *D' D''* within the walls of the press, and *D<sup>4</sup>* are filling or spacing blocks between the outer ends of said slides.

*d d* are binding-bolts passing downwardly through the several bars of the follower and filling-bar *D<sup>3</sup>*.

*d' d'* are transverse bolts passing through filling-bar *D<sup>3</sup>* and said follower-bars *D' D''* for securing said filling-bar in place.

*E* represents the usual top board or abutment of the press, composed of bars and spaces, the same as the follower, and provided with suitable catches *e*, which engage notches or teeth in the sides *A A*, whereby it may be adjustably held against upward movement and adapted to the size of bale desired.

*F F'* represent two upright shafts or pillars, one at each side of the press, having bevel-gears *ff*, keyed or otherwise firmly secured to their upper ends, as shown in Figs. 1 and 2. The upper ends of the shafts *F F'* pass through the top frame-bar *C* and plates *c* thereon, wherein they have a proper bearing. The lower ends of said shafts are preferably formed into pivots *f'*, which rest and turn in the metallic step-blocks or sockets *f<sup>2</sup>* on the base *B*, as shown in Figs. 1 and 3.

*F<sup>2</sup>* are collars on the shafts *F F'*, abutting against the lower face of top frame-bar *C*, for obviating any possible vertical movement of said shafts.

*G* represents a horizontal shaft journaled in boxes or pillow-blocks *g g' g''* on the top bar *C*, and *G'* are small bevel gears or pinions keyed to the shaft *G* and intermeshing with the bevel-gears *f* above mentioned. *H H'* are gear-wheels keyed to said shaft *G* outside the boxes *g g'*, and *h h'* are pinions keyed to short shafts *I*, journaled in boxes *i i* on the



bottom of top bar C, as shown in Figs. 1 and 3, said pinions engaging said gears H H', and said short shafts I having square ends, upon which are mounted the driving handles or cranks J. The ends of the shaft G are square, so that the cranks J may be applied directly thereto, if desired, especially in the beginning of an operation on a bale, when the machine is to be quickly operated, and, of course, when less power is required. The short shafts I are so mounted in their boxes *i i* that they may be readily slipped lengthwise, inwardly or outwardly, to disengage their accompanying pinions *h h'* from the gear-wheels H H' when it is desired to operate the latter separately, or to lessen the resistance when the follower is to be lowered for another operation.

K represents tackle-blocks mounted on base-blocks L, the latter being in turn attached to the sides A A, one at either side the vertical shafts or pillars F F', as shown in Fig. 3.

*l l* are vertical tie or brace rods connecting the outer ends of the tackle-block shafts or studs *k* with the top bar C, whereby the said tackle-blocks are very firmly held in place against any vertical pull.

M M' are tackle-blocks mounted on the outer faces of the projecting ends of the follower-slides D' D'', and *m m'* are two ropes, each one being passed through the upper and lower tackle-blocks K, K, M, and M' on both sides the press, as shown in Figs. 1 and 3.

N N' are vertical links or arms secured to the slides D' D'', and provided for the purpose of receiving and holding the opposite ends of both ropes *m m'* at each side of said vertical shafts F F'. *n* is a diametrical aperture or opening near the lower end of each of said shafts F F', for the passage and firm engagement therewith of said ropes. It will be seen that the middle portions of said ropes lie within said apertures *n*, both end portions passing over said tackle-blocks and being in about equal lengths on each side of said apertures. I prefer to journal the shafts *n' n'* of the lower pulley-blocks M in a line a little lower than those of the blocks M', as shown in Fig. 3, in order to lead the ropes passing from the said pulley-blocks M to the shafts F F', just below the line that the ropes follow in feeding from the pulleys of said blocks M', and thereby prevent frictional contact, or one portion of the said ropes winding upon another.

O O are notches in the lower edge of follower slide-bar D'', as shown in Fig. 4, to receive the several ropes as they pass from the pulley-blocks M' to the vertical shafts F F', and thereby guide that portion of said ropes to said shafts just above the feeding portions of said ropes from pulley-blocks M, thus aiding in the avoidance of frictional contact or the winding of one part of said ropes on another.

In the operation of my press the hemp or

other material to be baled is placed within the open chamber, as usual. When the doors have been properly closed, the follower is raised, and thus brought to bear upon said material, by turning the cranks J in the direction indicated by the arrow shown in Fig. 3. Rapid work at the first of the pressing is best accomplished by placing the cranks on the ends of shaft G, and slower and more powerful pressing or compacting the bale is then accomplished by transferring the said cranks to the short shafts I. The turning of the cranks J revolves the gears H H' in the direction indicated by the several arrows shown adjacent thereto, and they in turn revolve the shaft G, upon which are mounted the pinions or small bevel-gears G' G'. The large bevel-gears *f f* on the upper ends of the vertical shafts F F' are now brought into action by said bevels G', and they in turn revolve said shafts F F' in the direction indicated by the arrows thereon. The shafts F F', with their respective ropes *m m'*, now practically form a vertically-disposed windlass, which, together with the tackle-block mechanism K M M', serve to raise the follower in forming and compressing the bale. It will be seen that the ropes *m m'* are each single ones, or in one length each, with their opposite ends secured, as above described, and their middle portions lying within the aperture or eye at the lower end of both shafts F F'. Now, when the said shafts F F' revolve, the ropes are wound upon them, approaching from the lower pulley-blocks at each side, thus forming a double lift which is exceedingly powerful, as is obvious, and causes the material in the press to be brought into a very small compass. Instead of using a hempen or fibrous rope, as shown, a metallic chain could be used and the machine operate as well, as is obvious. Upon the completion and removal of a bale the parts assume their respective normal positions by reversing the movement of the cranks J, the weight or gravity of the follower materially assisting in the operation.

In baling hemp and such material the lower portion of the machine is buried, as usual, in a chamber below the ground-level to the depth shown by the dotted lines in Figs. 1 and 3, thereby facilitating the charging of the press with material and the discharge or removal of the finished bale.

It is quite obvious that with but little alteration my combination of movements herein shown and described could be very readily applied to a hoist or elevator car and a very powerful device for its operation supplied.

In baling cotton in my construction of press a material advantage is gained over the screw-presses in general use, and that is that the box can be made of such dimensions as to take in a full charge for a bale at one compression, and the sinking of the shafts or posts F F' below the base of the press is not done, nor is it necessary, while in the use



of screws they must be sunk below the base of the press in the ground, and more than a single compression is necessary in forming a bale.

5 I claim—

1. The combination of a follower or platen, a pair of upright shafts, a pair of ropes winding upon said shafts and thereby constituting, in connection therewith, a vertically-disposed windlass at either side the machine, a set of tackle-blocks to each said pair of ropes, and through which said ropes pass, a pair of horizontal gear-wheels mounted on said shaft, and a revolving shaft journaled at right angles to said upright shafts and provided with pinions which engage said gear-wheels, the whole being mounted on a suitable frame and adapted to operate substantially as herein set forth.

20 2. In a baling-press, the combination of the follower D, horizontal shaft G, having the bevel gears or pinions G', and gears H H',

mounted thereon, upright shafts or pillars F F', having bevel-gears *f* keyed to their upper ends and engaging said gears G', and the rope and tackle-block mechanism K M M' *m* *m'*, the whole being arranged, constructed, and adapted to operate substantially as herein set forth.

3. The combination of a follower D, shaft G, having gears G' and H H', mounted thereon, vertical shafts or pillars F F', having bevel-gears *f* on their upper ends and engaging said gears G', ropes *m* *m'*, tackle-block mechanism K M M', and the adjustable driving gears or pinions *h* *h'*, the whole being constructed, arranged, and operated substantially as herein set forth.

In testimony of which invention I have hereunto set my hand.

THEODORE TEBOW.

Witnesses:

JOHN E. JONES,  
C. B. DONALDSON.

It is hereby certified that in Letters Patent No. 410,046, granted August 27, 1889, upon the application of Theodore Tebow, of Nicholasville, Kentucky, for an improvement in "Baling-Presses," an error appears in the printed specification requiring the following correction: In line 13, page 3, the word "shaft" should read *shafts*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office. •

Signed, countersigned, and sealed this 10th day of September, A. D. 1889.

[SEAL.]

CYRUS BUSSEY,

*Assistant Secretary of the Interior.*

Countersigned:

C. E. MITCHELL,

*Commissioner of Patents.*