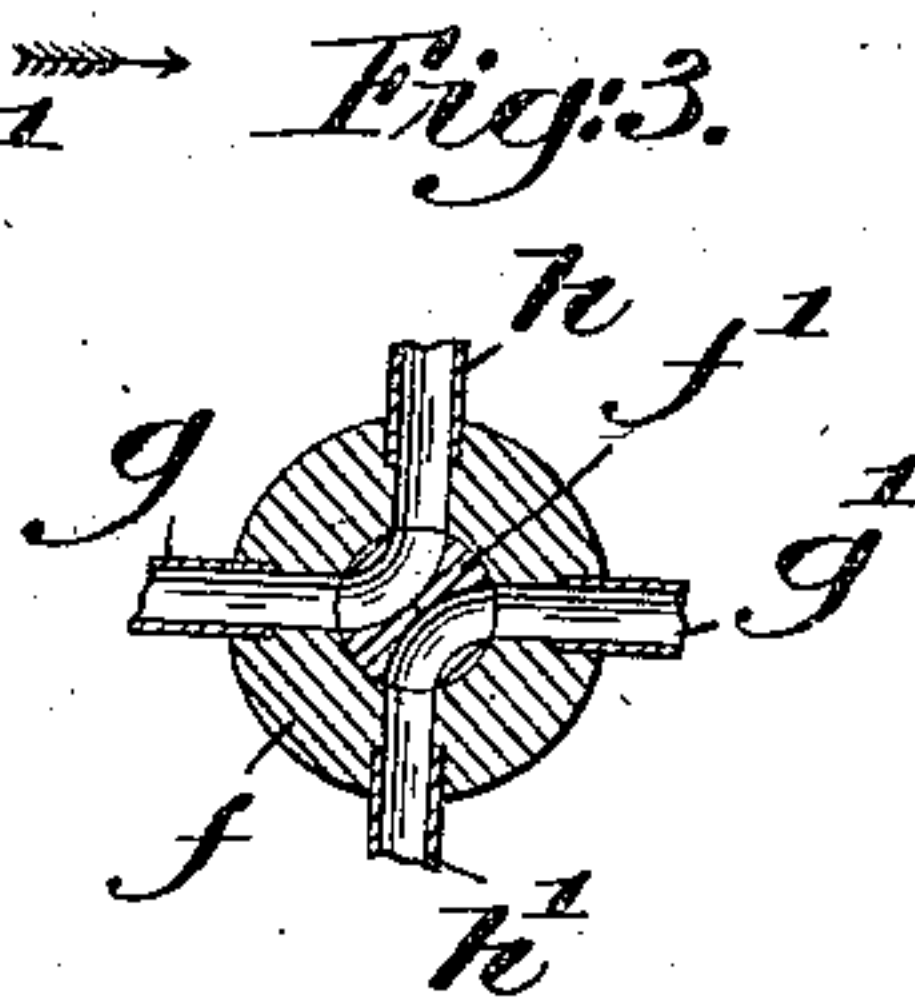
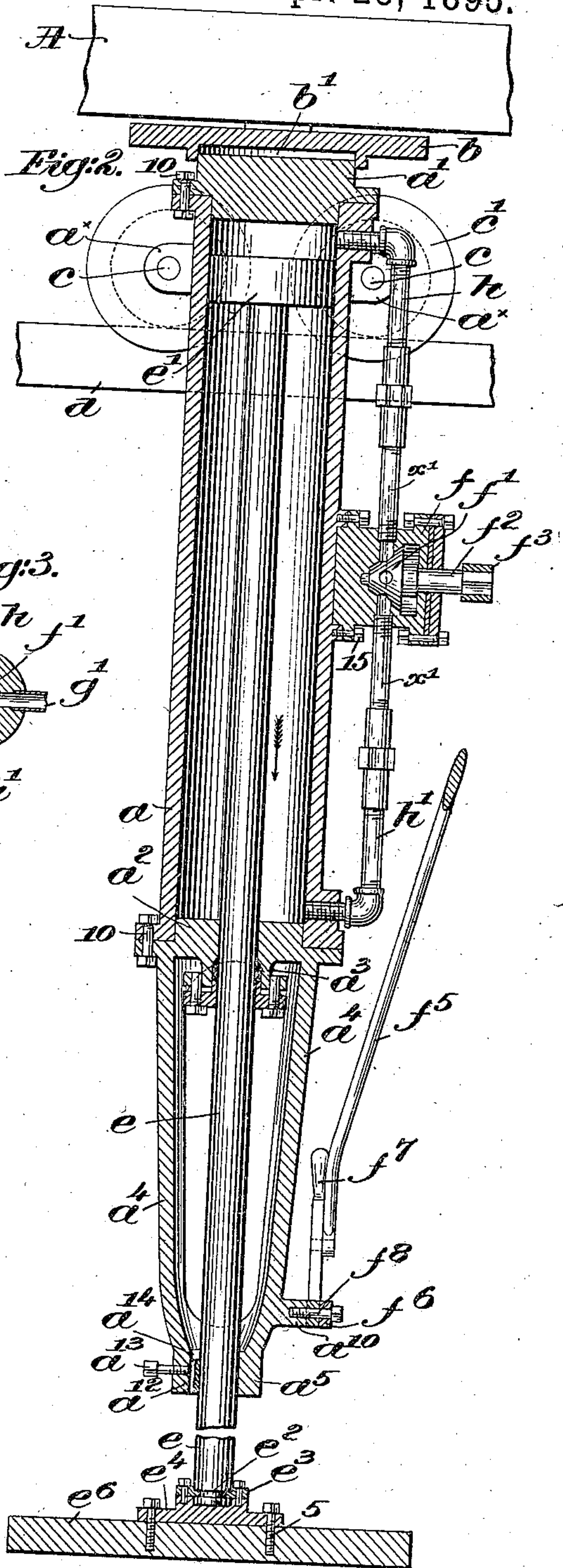
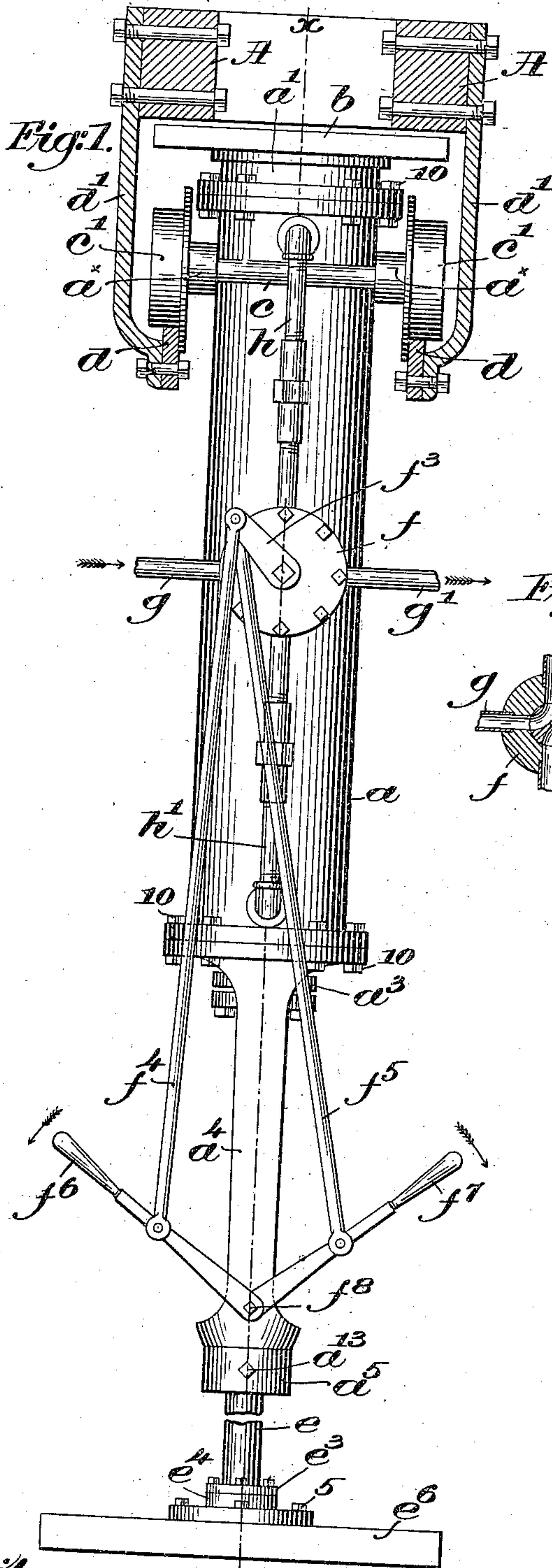


(No Model.)

C. A. CUSHMAN & J. F. GUTHRIE.  
PACKING PRESS.

No. 538,013.

Patented Apr. 23, 1895.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

CHARLES A. CUSHMAN AND JAMES F. GUTHRIE, OF SOMERVILLE,  
MASSACHUSETTS.

## PACKING-PRESS.

SPECIFICATION forming part of Letters Patent No. 538,013, dated April 23, 1895.

Application filed December 10, 1894. Serial No. 531,311. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES A. CUSHMAN and JAMES F. GUTHRIE, of Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Packing-Presses, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

When bacon, hams and other similar articles are packed into boxes, it is desirable to pack the boxes or cases as tightly as possible, not only to thoroughly fill them, but to also prevent movement or shifting of the contents during transportation.

In packing-houses, presses have been employed for this purpose, the box or case, with its contents, being placed under the plunger of the press with the box cover between the contents and the face of the plunger, and power is applied to the latter to force the lid or cover into place, compressing the contents by such operation, and the cover is nailed or otherwise secured in place before the pressure is removed. So far as we are aware, the presses used for this purpose are cumbersome, requiring the combined strength of several men to operate them, and, in practice, it takes considerable time to pack each box or case.

This invention has for its object the production of a simple, compact and rapidly operated power-press, the press being mounted upon a suitable track so that it can be quickly moved from one point to another, thus obviating considerable handling of the packing cases, the application of motive power to the press, automatically acting to hold it stationary and rigid against the fixed abutment.

In accordance therewith our invention consists in details of construction, arrangement and operation hereinafter fully described and particularly pointed out in the claim.

Figure 1, in end elevation, represents a press embodying our invention, the plunger-rod being broken off to save space. Fig 2, is a longitudinal section on the line  $x$ , Fig. 1; and Fig. 3, is a sectional detail on the line  $x'-x'$  Fig. 2.

We have herein shown the press as composed of a strong cylinder  $a$  having heads  $a'$ ,

$a^2$ , suitably flanged and connected with the flanged ends of the cylinders by bolts 10, in usual manner.

The head  $a'$  is made as a solid block and cylindrical at its outer end to receive thereon a cap  $b$  chambered out at  $b'$  to receive easily therein the cylindrical end of the head  $a'$ , the said cap and head forming an air cushion by the compression of the air in the recessed part of the cap, for a purpose to be described.

Ears  $a^x$  secured to the cylinder receive loosely therethrough the axles  $c$  of suitably flanged supporting wheels or carriers  $c'$ , forming a truck, normally mounted upon rails  $d$  bolted or otherwise secured to depending arms  $d'$  attached to beams, as A, forming part of the packing-room ceiling, or it may be otherwise supported, if desired, said beams, however, being adapted to form a rigid abutment for the upper end of the press when in use.

The cylinder head  $a^2$  has a plunger opening therein, and also a suitable stuffing box  $a^3$  and downwardly extended guides  $a^4$  terminating in a bearing  $a^5$  some distance below the head to guide the plunger-rod  $e$  when extended. The said plunger-rod has secured thereto a suitable piston  $e'$ , movable in the cylinder, and we have shown the outer extremity of the plunger rod as rotatably secured by an annular groove  $e^2$  and co-operating plate  $e^3$  to a bearing block  $e^4$  secured by suitable bolts, as 5, to a plunger  $e^6$ , whereby the latter is rotatable about the plunger-rod.

We have secured to the cylinder herein shown, as by bolts 15, a valve-box  $f$ , having a four-way valve  $f'$  therein of usual construction, and as shown in Figs. 1 and 3, the valve-box has an inlet  $g$  and an outlet  $g'$  and pipes  $h$  and  $h'$  opening respectively into the cylinder at its opposite ends and on opposite sides of the piston  $e'$ .

As shown in Fig. 2, the plunger is retracted, and the apparatus is in position to pack a box when brought beneath the plunger  $e^6$ , and the valve  $f'$  as shown in Fig. 3, is turned to connect the inlet  $g$  with the pipe  $h$  leading to the upper end of the cylinder, the outlet or exhaust  $g'$  being connected with the pipe  $h'$  forming the cylinder exhaust. If now steam, compressed air, or water under pressure is ad-



mitted to the cylinder through the pipe *h*, the plunger will be depressed and forced against the lid of the box or case placed thereunder, and as the pressure of the fluid increases, the contents of the box or case will be powerfully compressed therein, and the cover of the box can be nailed in place before the pressure is removed.

It will be noticed by an examination of Fig. 2, that normally the weight of the press is supported by the truck-wheels *e'* resting upon the rails *d*, the cap *b* being below the under surface of the beams *A*. The pressure of the fluid upon the top of the piston *e'* will force it downward until the plunger meets the box cover and further movement is resisted by the contents of the box or case, and the pressure of the fluid on the cylinder head *a'* will then tend to lift the cylinder and its attached parts until the cap *b* is brought firmly against the under side of the beams *A*, further pressure compressing the air in the space *b'*, and cushioning thereby the apparatus. The admission of more fluid above the piston will then force the plunger downward, the beams *A* acting as a fixed abutment for the apparatus until the contents of the box or case have been sufficiently compressed to enable the cover to be secured in place. As soon as the cover has been secured, the valve *f'* is turned by mechanism to be described, to connect the pipes *h* and *g'* and pipes *g* and *h'*, so that the fluid above the piston will be exhausted through the outlet *g'*, and will be admitted beneath the piston through the pipe *h'* to raise it into normal position, and as soon as this takes place, the press will settle down by its weight until the wheels *c'* again rest upon the tracks *d*, it being understood that when the apparatus is raised as has been described, the wheels will be raised from the tracks and will remain out of contact therewith throughout the operation of pressing.

A valve stem *f<sup>2</sup>* is extended outwardly through the valve box, and has fast thereon an arm *f<sup>3</sup>*, which is pivotally connected by links *f<sup>4</sup>* and *f<sup>5</sup>* with handle levers *f<sup>6</sup>* and *f<sup>7</sup>* pivoted at *f<sup>8</sup>* to a boss *a<sup>10</sup>* on one of the

The bearing *a<sup>5</sup>* for the plunger-rod *e* is cut away at one side, as at *a<sup>14</sup>*, Fig. 2, to receive therein a bearing block *a<sup>13</sup>* held in adjusted position by a set screw *a<sup>18</sup>*, to prevent the plunger-rod from gradually falling when not in use.

By providing the apparatus with two actuating handles as *f<sup>6</sup>* and *f<sup>7</sup>*, it may be operated from either side with equal facility.

The tracks *d* may be so located as to convey the press to various parts of the packing-room, and by means of a supporting truck, said apparatus is easily carried from one to another point as it may be needed, so that one man can operate the press with the greatest ease.

The press is very rapid and efficient in operation, and steam, water, or compressed air may be used as the motive fluid as desired or as most convenient, the inlet pipe *g'* being connected with the source of supply by flexible tubing, and by similar means the exhaust may be carried to any desired point.

It will be obvious that the press may be used in any case where it is desired to compress any substance into smaller space, whether confined in a case or box or not, for it will be evident that baled products may be compressed preparatory to being banded or otherwise held in compressed condition.

We claim—

In a compressing or packing press, a cylinder having a port at each end, a piston reciprocable therein, and an attached plunger-rod and plunger, combined with a controlling valve for said ports, an internally recessed cap on and into which the closed end of the cylinder, tightly enters as a piston to form an air cushion when moved against a fixed abutment, and means to portably suspend said cylinder, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES A. CUSHMAN.  
JAMES F. GUTHRIE.

Witnesses:

CHARLES W. MCINTOSH,  
HARRIE W. PIERCE.

It is hereby certified that Letters Patent No. 538,013, granted April 23, 1895, upon the application of Charles A. Cushman and James F. Guthrie, of Somerville, Massachusetts, for an improvement in "Packing-Presses," were erroneously issued to said Cushman and Guthrie as owners of the invention; whereas said Letters Patent should have been issued to *the North Packing and Provision Company*, said *Company* being owner of the entire interest, as shown by the record of assignments in this office; 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 7th day of May, A. D. 1895.

[SEAL.]

JNO. M. REYNOLDS,  
*Assistant Secretary of the Interior.*

Countersigned:

JOHN S. SEYMOUR,  
*Commissioner of Patents.*