

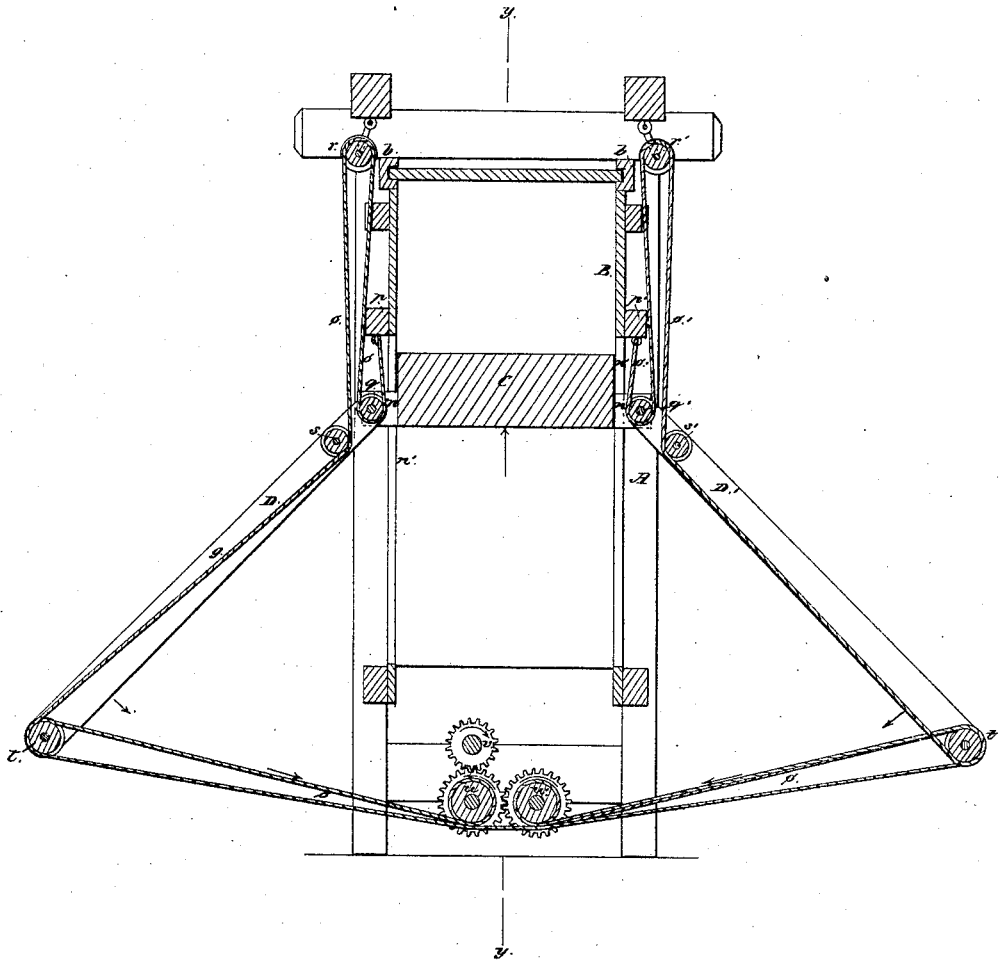
S. J. Austin,

Cotton Press.

N^o 46,205.

Patented Feb. 7, 1865.

Fig. 1



Witnesses:

Henry Morris
C. L. Topliff

Inventor:

S. J. Austin
per Munn & Co
Attorneys

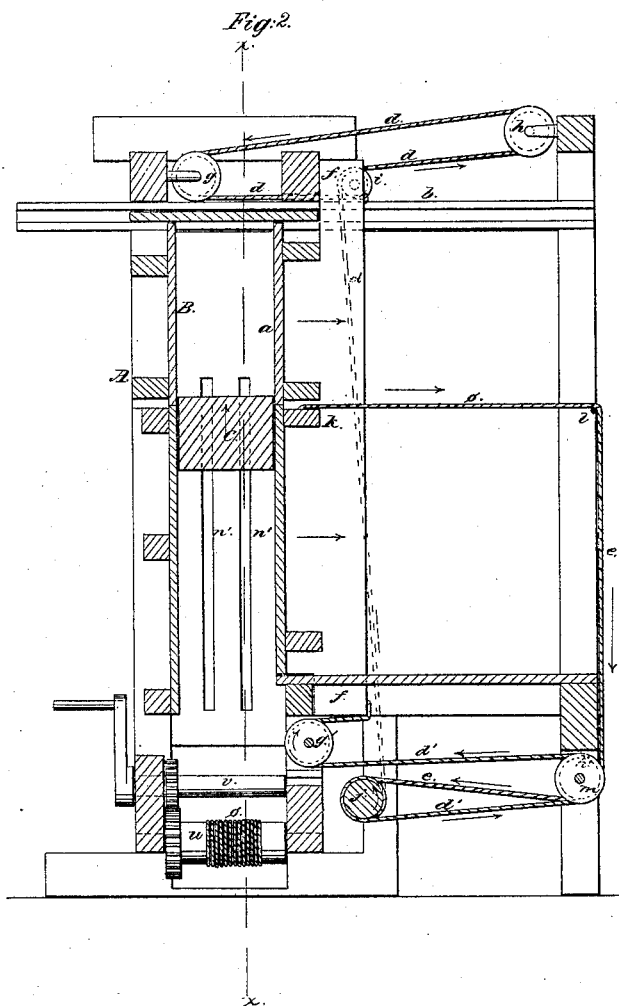
2 Sheets-Sheet 2.

S. J. Austin

Cotton Press.

N^o 46,205.

Patented Feb. 7, 1865.



Witnesses:
Henry Morris
C. L. Telford

Inventor:
S. J. Austin
Jos. Munn & Co.
Attorneys

UNITED STATES PATENT OFFICE.

STEPHEN J. AUSTIN, OF FREEPORT, MAINE.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 46,205, dated February 7, 1865.

To all whom it may concern:

Be it known that I, STEPHEN J. AUSTIN, of Freeport, in the county of Cumberland and State of Maine, have invented a new and Improved Press; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a transverse vertical section of this invention, taken in the plane indicated by the line *x x*, Fig. 2. Fig. 2 is a longitudinal vertical section of the same, the line *y y*, Fig. 1, indicating the plane of section.

Similar letters of reference indicate like parts.

This invention consists in a press-box, one side of which is made movable, so that the size of said box can be increased or decreased at pleasure. The movable side is fitted in suitable grooves, and it connects by ropes or chains with a windlass in such a manner that by turning said windlass in one direction the movable side is thrown open, and by turning it in the opposite direction said side is closed up, and by the peculiar arrangement of the windlass and rollers the chains are always kept taut. The follower is operated by two levers or lifters, the inner ends of which are hinged to the follower and connected to ropes or chains which extend over pulleys secured to the frame, and thence down and under pulleys near the inner ends and over pulleys in the outer ends of said levers, and to a windlass or windlasses in such a manner that by the action of those branches of the ropes or chains extending from the inner ends of the levers over the pulleys secured to the frame of the press said levers are started from a horizontal position without requiring any attention from the operator. In order to take up the extra amount of chain without embarrassing the operation of the press, the chains used for operating the levers and the follower extend over two drums, which are geared together, so that they rotate in opposite directions, and that the length of chain required to give the press sufficient power to do the work may be taken up without difficulty.

A represents a frame made of strong timber, or of any other suitable material. This frame supports the press-box B, in which the material to be compressed is exposed to the follower C. One side, *a*, of the press-box is movable. It is secured to a carriage, *c*, which slides back and forth in suitable guideways, *b*, which are secured in the frame A, and the position of said carriage and of the movable side of the press-box is governed by ropes or chains *d d' e*. The ropes *d* are secured to the ends of uprights *f* of the carriage, and they extend over pulleys *g g' h h' i*, and to a windlass, *j*, on which they wind, as shown in Fig. 2 of the drawings. The rope *e* is secured with one end to the central cross-bar, *k*, of the carriage *c*, and it extends over a rod or roller, *l*, in the frame A, and under a pulley, *m*, to the windlass *j*. The ropes *d d'* wind on the windlass in one and the rope *e* in the opposite direction, and by turning said windlass in the direction of the arrow (marked thereon in Fig. 2 of the drawings) the rope *e* is wound up, and the strain exerted on this rope causes the movable side and carriage to move in the direction of the arrows (marked near the same in said figure.) At the same time the ropes *d d'* unwind from the windlass to allow the carriage to recede. In turning the windlass in the opposite direction to the arrow (marked thereon in Fig. 2 of the drawings) the ropes *d d'* wind upon the same, while the rope *e* unwinds and the movable side of the press-box closes up. By this arrangement the introduction of the article to be pressed into the press-box and the removal therefrom of the bales is greatly facilitated and much time and labor are saved. The follower C is forced upward by the action of two levers or lifters, D D', which are hinged to lugs or brackets *n*, projecting from the ends of said follower through slots *n'* in the ends or sides of the press-box. These levers are operated by ropes or chains *o o'*, one end of which is firmly secured to a rigid cross-bar, *p p'*, which forms portions of the frame A. Thence they extend through pulleys *q q'*, which are secured to the pivots, connecting the levers D D' with the brackets *n*, and up over pulleys *r r'*, which are suspended from the top cross-bars of the frame A, thence down under pulleys *s s'*, secured to the levers D D', near their inner

ends, and over pulleys $t t'$ in the loose ends of said levers, and finally to drums $u u'$, to which their outer ends are firmly secured, as clearly shown in Fig. 1. The drums $u u'$ are geared together and to a driving-shaft, v , so that by imparting to said shaft a rotary motion in the proper direction the drums revolve in opposite directions, and a strain is exerted on the chains $o o'$, whereby the follower is raised or permitted to descend. By using two drums, $u u'$, instead of one, I am enabled to take up the length of chain required to give the press sufficient power to do the work in hand, the pressure required in pressing hay, for instance, being fully equal to the inverse ratio of the square of the fraction denoting the relative size of the bale. Thus if a certain power is required to reduce a bale to a given size, four (4) times the power is necessary to reduce the bale to one-half ($\frac{1}{2}$) that size, nine (9) times the power to reduce it to one-third ($\frac{1}{3}$) said size, and so on. At the beginning of the pressing operation the follower is clear down, and the levers $D D'$ are in a horizontal position, or nearly so. From this position the levers cannot be started without raising their inner ends up a certain distance, and ordinary presses of a similar construction to mine labor under the difficulty that the levers or lifters have either to be lifted up by hand at the beginning of the operation, or they cannot be allowed to come down to a horizontal position, and the press has to be made so much higher. This difficulty is obviated by running the chains over pulleys $r r'$ in the top of the press, and through

under pulleys $q q'$, secured to the inner ends of levers, as above described. By this arrangement the strain on the chains or ropes raises the inner ends of the levers from a horizontal to an inclined position, and the labor of operating the press is thereby considerably reduced.

By a press of this construction a quantity of hay or other similar material—such as generally used for one bale—can be reduced into a bale of half the usual bulk in half the usual time, producing a saving in two respects—viz., in the cost of transportation and also in the expense of pressing.

I claim as new and desire to secure by Letters Patent—

1. The expanding press-box B, constructed substantially as and for the purpose described.

2. The ropes or chains $d d'$, pulleys $g g'$, $h h'$, $i m$, and windlass j , applied in combination with the movable side a of the press-box B, in the manner and for the purpose substantially as herein set forth.

3. The pulleys $q q'$, $r r'$, $s s'$, and $t t'$, applied in combination with the chains $o o'$, levers $D D'$, and follower C, in the manner and for the purpose substantially as shown and described.

4. The double drums $u u'$, in combination with the chains $o o'$, levers $D D'$, and follower C, applied and operating substantially as and for the purpose set forth.

STEPHEN J. AUSTIN.

Witnesses:

WM. G. SHAW,
S. WINES.