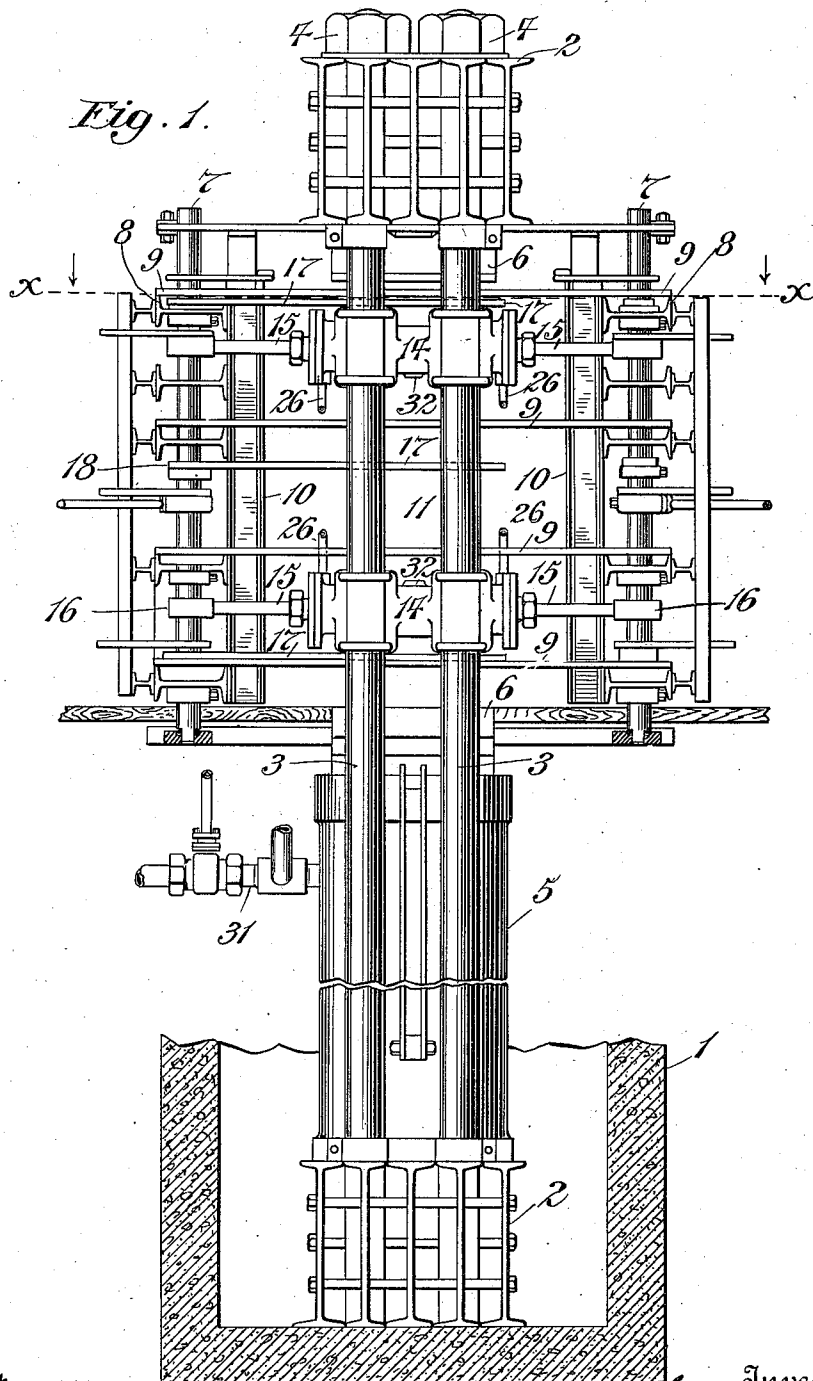


C. J. LUCE.
COTTON PRESS.
APPLICATION FILED APR. 1, 1911.

1,014,765.

Patented Jan. 16, 1912.

2 SHEETS-SHEET 1.



Witnesses:
Edward Lowland
Chas. D. Edwards.

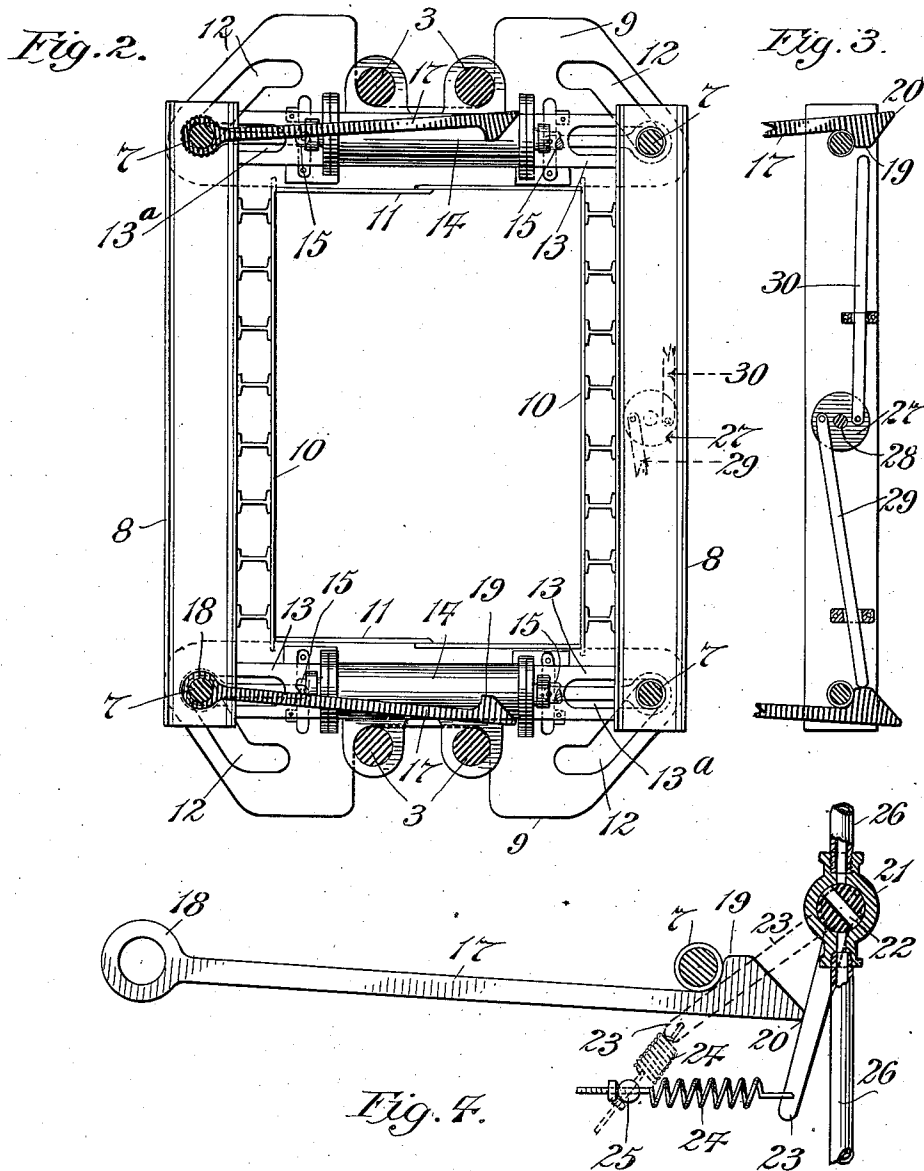
Inventor
Charles J. Luce
By his Attorneys
Stewart Stewart

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UNITED STATES PATENT OFFICE.

CHARLES J. LUCE, OF NIAN TIC, CONNECTICUT, ASSIGNOR TO THE STANDARD COTTON COMPRESS COMPANY, A CORPORATION OF DELAWARE.

COTTON-PRESS.

1,014,765.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed April 1, 1911. Serial No. 618,426.

To all whom it may concern:

Be it known that I, CHARLES J. LUCE, a citizen of the United States of America, residing at Niantic, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Cotton-Presses, of which the following is a specification.

My invention relates to an improvement in cotton presses of the type invented by me and for which I secured Letters Patent of the United States, entitled cotton compress, dated June 1st, 1909, No. 923,190.

My present improvement relates particularly to means for locking the compression walls or platens of the press at a predetermined stage in the compression and automatically relieving the compression mechanism so that the same may be retracted.

My invention is particularly adaptable in the use of a press such as that described in my said patent where fluid under pressure is used in accomplishing the compression. In the patent referred to I employ mechanical means to accomplish the compression, but in later developments of the same invention, I find it convenient to substitute hydraulic pressure for the mechanical means described in said patent. One of the difficulties encountered in the use of such hydraulic means is the maintaining of a uniform pressure on the horizontal pressure walls or platens while the vertical pressure is being accomplished. I find that the valves which may be employed to cut off the exhaust from the hydraulic cylinders often leak and it is desirable therefore to accomplish a positive and mechanical lock at the moment that the pressure has arrived at its predetermined limit, and at the same time to automatically throttle or cut off the supply of water or other fluid to the compression cylinders which have been employed to compress the bale horizontally and then turn into the vertical cylinder the entire force of water pressure to accomplish the final vertical pressure.

I have illustrated my invention in the accompanying drawings, referring to the several parts by numerals, designating like parts by like numerals.

Figure 1 is an elevation of the press. Fig. 2 is a horizontal section taken on the lines $x-x$ looking in the direction of the arrows. Fig. 3 is a plan view of a detail as

seen in the horizontal section shown in Fig. 2. Fig. 4 is another plan view partly in section of a detail not shown in the other figures which represents an auxiliary device for throttling the fluid pressure when the locking mechanism is brought into position.

1 is a foundation supporting the press.

2 and 2 are horizontal braces in which are anchored the four torsion rods 3.

5 is a hydraulic cylinder operating vertically to compress the bale between the platens 6—6. The four vertical shafts 7 carry the platens operating horizontally and also means for advancing these platens as is more fully illustrated and described in my said patent.

8 are beams mounted on the shafts 7, and 9 are pressure plates in like manner mounted on the shafts 7, while 10—10 are vertical platens working horizontally in one direction and 11—11 are vertical platens working horizontally at right angles to the platens 10.

12 are diagonal slots cut into the platens 9, while 13 are angle beams forming part of the frame having cut therein parallel slots or ways 13^a.

14 are hydraulic cylinders suitably supported on the torsion rods 3 and provided with duplicate pistons, not shown, secured to the piston rods 15. The yokes 16 embrace the shaft 7 and are secured to the pistons 15.

17 are a plurality of arms provided at one end with the yoke 18 and at the other end with the hook 19, and tapering to a point 20.

21 is a valve controlling the supply of fluid under pressure to the cylinders 14.

22 is the valve port for the valve 21, while 23 is a lever controlling the position of said valve.

24 is a spring interposed between the lever 23 and the binding post 25, the latter being pivotally connected.

26 are pipe connections with the cylinders 14 controlling the supply of fluid under pressure to said cylinders, while 32 is an exhaust port for the same provided with suitable valves not shown.

27 is a disk mounted on the shaft 28 which passes through the beams 8. One of these is mounted on each beam which is opposite the arm 17.

29 and 30 are bolts pivotally connected to the disk 27, the bolt 29 being slightly longer

than 30, thus engaging the end of the hook 19 on one side in advance of the engagement of the same part on the other side. In dotted lines in Fig. 2, I have indicated the position of the device shown in Fig. 3.

31 represents suitable valves controlling the supply of fluid pressure to the cylinder 5.

The operation of my device is as follows:

10 The bale is introduced into the press; the valve 22 is opened by permitting the lever 23 to be moved in the power of the spring 24, as shown in dotted lines in Fig. 4; the horizontal compression thereupon is started
15 by reason of the fact that the piston rods 15 which are secured to the yoke 16, draw the shafts 7 toward each other. These shafts being guided in the parallel ways 13^a, the plate 9 carrying the platen 11 is forced inwardly by reason of the fact that the shafts
20 7 bear upon the eccentric slots 12, thus causing the pressure plates to be operated in a direction toward the center of the press. As the compression proceeds, the end 20 of the arm 17 engages the valve arm 23 shown in dotted lines in Fig. 4 and causes the same to retract against the pressure of the spring
25 24. When the hook 19 arrives in position to be thrown into engagement with the vertical shaft 7, the pressure of the spring 24 causes the same to fall into the position shown in Fig. 4. When in this position, it will be noted that the hook 19 has intercepted the path of retraction of the shaft 7
30 and has also accomplished a throttling of the supply of fluid under pressure to the cylinders 14. The pressure now may be exhausted from the cylinders 14 through the ports 32, and the press will be prevented
35 from retraction by reason of the fact that the arm 17 is secured to the posts 7, at one end by the yoke 18 and at the other end by the hook 19, thus operating as a permanent binding force independent of the hydraulic
40 pressure. At this stage of the operation, the vertical pressure is brought into action by permitting fluid under pressure to flow to the cylinder 5 through the valve 31, and when this is accomplished and the bale
45 ready to be bound as described in my patent above referred to, the hooks 19 may be released from their hold on the shaft 7 by the operation of the device shown in Fig. 3. Attached to the vertical shaft 28 is a hand
50 wheel not shown in these drawings which when rotated a fraction of a turn causes the bolt 29 to force the hook 19 away from its engagement with the shaft 7, and with a further turn of the same shaft 28, the bolt
55 30 engages the hook 19 on the opposite sides of the press and throws the same out of engagement in like manner. It will be understood that there are as many of these releasing devices as there are pairs of
60 hooks. I make the bolt 29 slightly longer

as stated in order that the whole pressure may be exerted against the hooks on one side first and then against the hooks on the other side, thus making the operation of disengaging the hooks easier.

What I claim is:

1. In a cotton press substantially as described means operated by fluid pressure to compress in combination with mechanical means to arrest and hold such compression
75 against retraction, such mechanical means operating also to throttle the fluid pressure as said restraining means is brought into operation.

2. In a cotton press substantially as described means operated by fluid pressure to compress, in combination with a plurality of arms pivotally mounted at one end to the pressure shafts on one side of the press, and each arm provided at the other end with a hook adapted to intercept the path of retraction of the pressure shaft opposite the one to which it is secured, at a predetermined stage in the contraction of the press said arms operating to restrain the press
80 against expansion when the fluid pressure is relieved.

3. In a cotton press substantially as described means operated by fluid pressure to compress, in combination with a plurality of arms pivotally mounted at one end to the pressure shafts on one side of the press, and each arm provided at the other end with a hook adapted to intercept the path of retraction of the pressure shaft opposite the one to which it is secured, at a predetermined stage in the contraction of the press, said arms operating to restrain the press against expansion when the fluid pressure is relieved, with means operated by the arms as the press contracts to throttle the fluid pressure when the hooks intercept the path of retraction of the pressure shafts.

4. In a cotton press substantially as described means operated by fluid pressure to compress, in combination with a plurality of arms pivotally mounted at one end to the pressure shafts on one side of the press, and each arm provided at the other end with a hook adapted to intercept the path of retraction of the pressure shaft opposite the one to which it is secured, at a predetermined stage in the contraction of the press, said arms operating to restrain the press against expansion when the fluid pressure is relieved, with means to disengage the hooks from the shafts to permit retraction of the press consisting of two bolts one shorter than the other and both operated from a rotating disk to which they are pivotally
110 connected.

5. In a cotton press substantially as described means operated by fluid pressure to compress, in combination with a plurality of arms pivotally mounted at one end to the
130

pressure shafts on one side of the press, and
each arm provided at the other end with
a hook adapted to intercept the path of
retraction of the pressure shaft opposite the
5 one to which it is secured, at a predeter-
mined stage in the contraction of the press,
said arms operating to restrain the press
against expansion when the fluid pressure is
relieved, with means operated by the arms as
10 the press contracts to throttle the fluid pres-
sure when the hooks intercept the path of
retraction of the pressure shafts, with means
to disengage the hooks from the shafts to
permit retraction of the press consisting of

two bolts one shorter than the other and 15
both operated from a rotating disk to which
they are pivotally connected, with means to
open the fluid pressure valve when the hooks
are disengaged from the shafts and the press
is retracted. 20

Signed by me at New York city, county
and State of New York, this 31st day of
March 1911.

CHARLES J. LUCE.

Witnesses:

EVAN L. TAMBLYN,
CHARLES D. EDWARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."