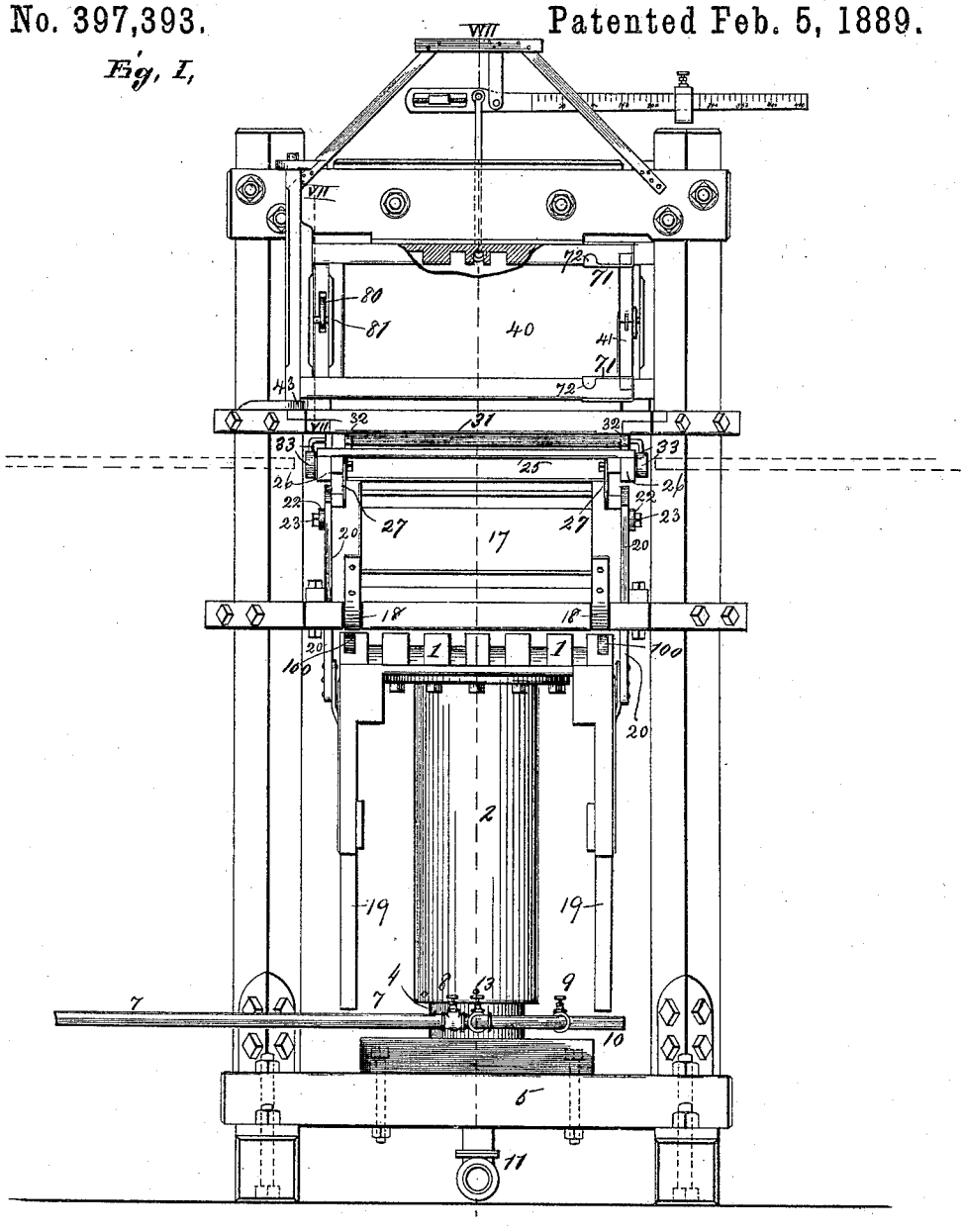
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BALING PRESS.

No. 397,393. Patented Feb. 5, 1889.

Fig. 1.



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Fig. II

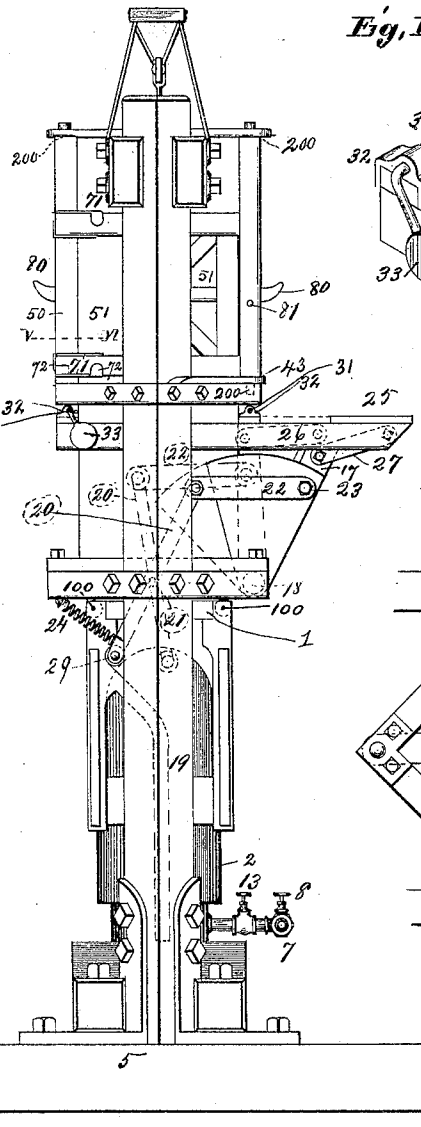


Fig. III.

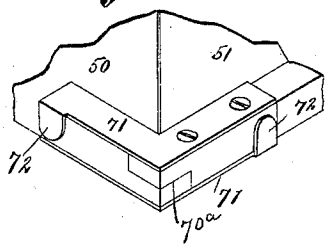


Fig. IV.

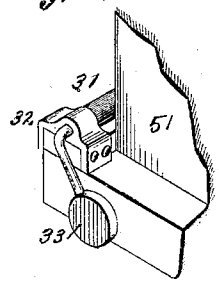


Fig. V.

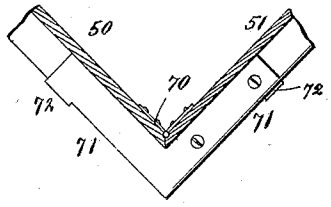


Fig. VI.

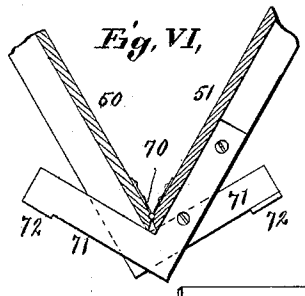
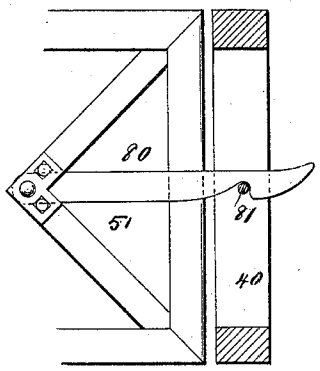


Fig. VII.



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Fig. VIII.

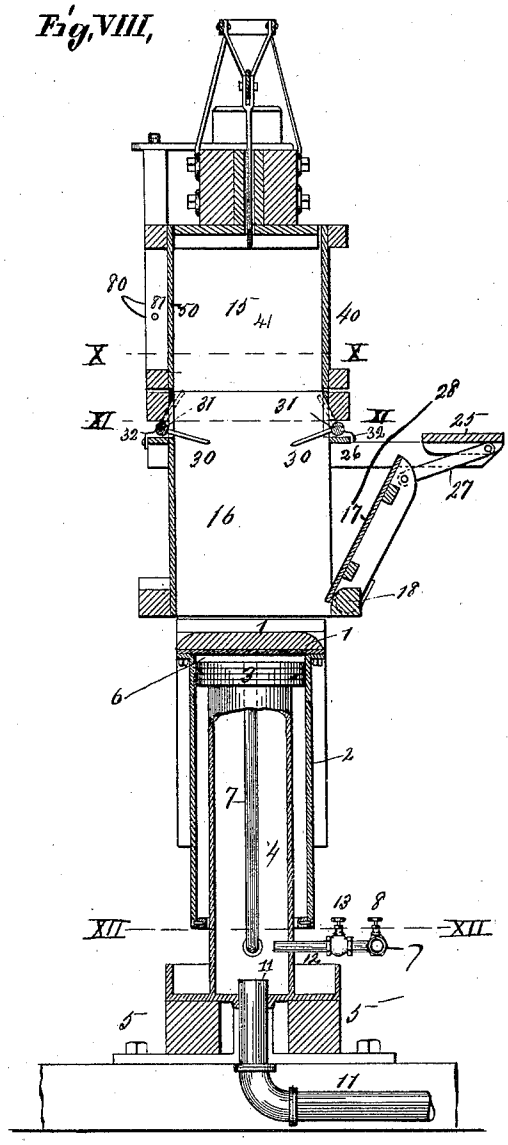
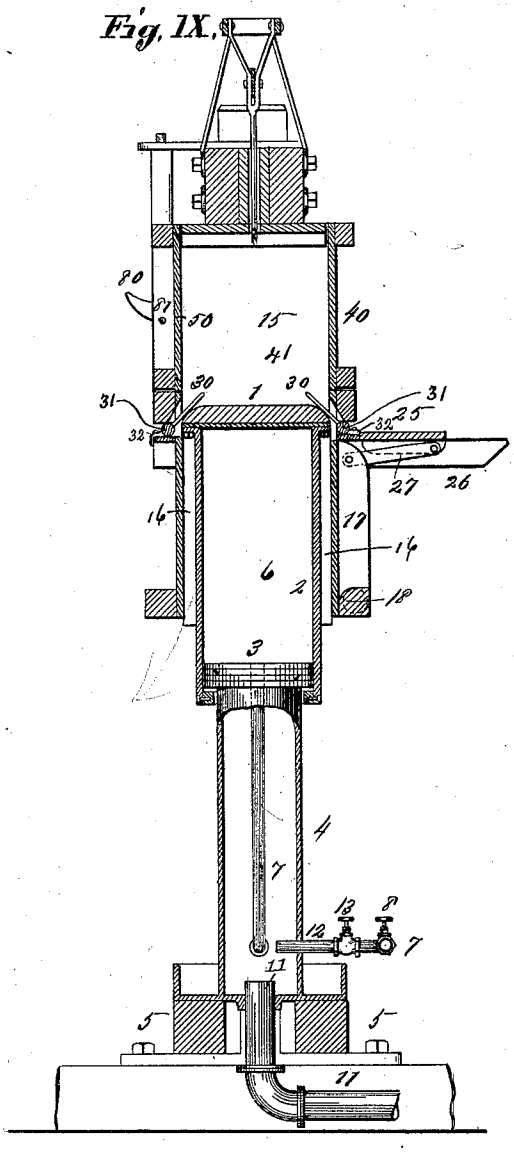


Fig. IX.



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Fig. X.

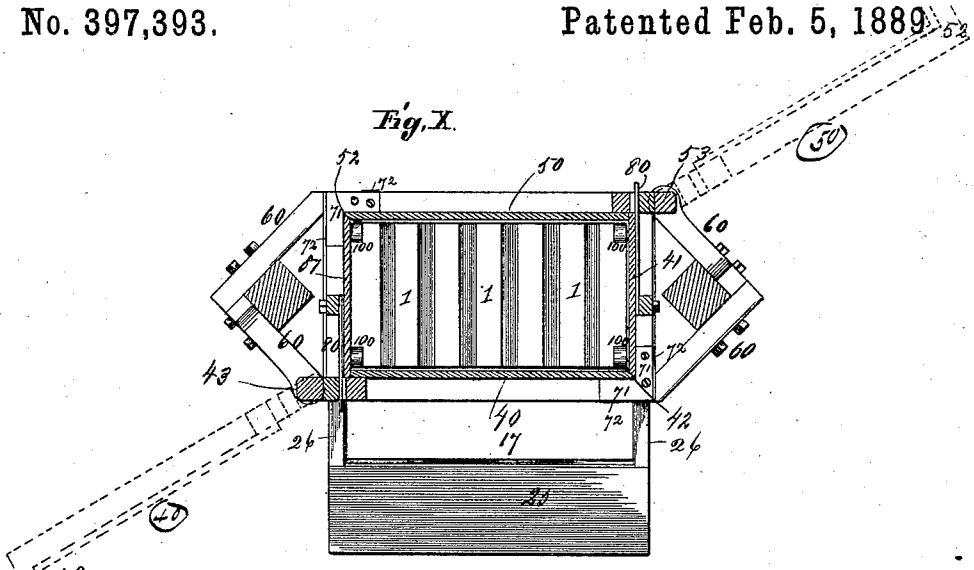


Fig. XI.

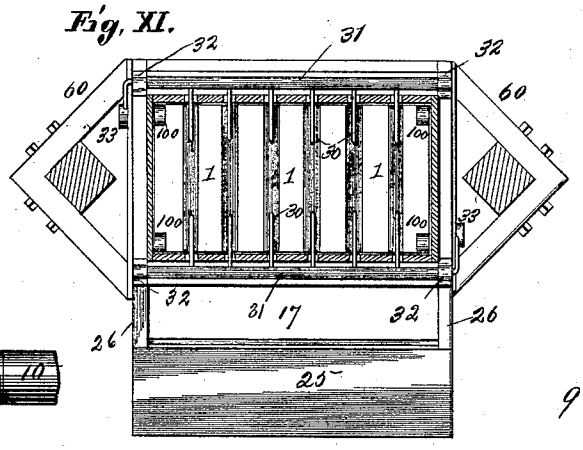


Fig. XIII.

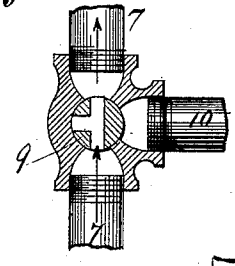


Fig. XIV.

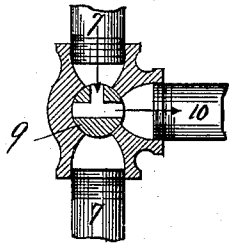
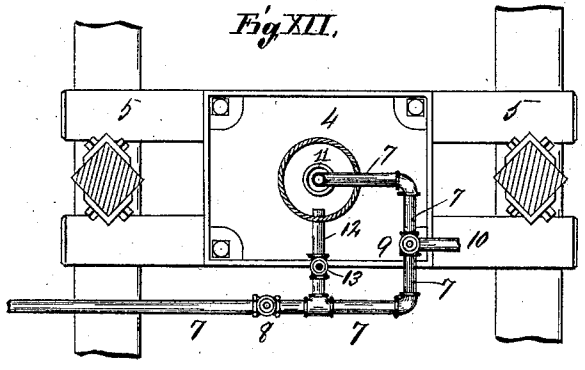


Fig. XII.



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UNITED STATES PATENT OFFICE.

HIRAM N. SMADES, OF LITTLE ROCK, ARKANSAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 397,393, dated February 5, 1889.

Application filed June 14, 1888. Serial No. 277,043. (No model.)

To all whom it may concern:

Be it known that I, HIRAM N. SMADES, of Little Rock, in the county of Pulaski and State of Arkansas, have invented a certain new and useful Improvement in Baling-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure I is a front elevation of my improved press, parts being broken away. Fig. II is a side view of the same. Fig. III is an enlarged detail perspective view, illustrating the manner of hinging the sides and ends of the baling-chamber together so as to fold inward. Fig. IV is an enlarged detail perspective view, illustrating the counter-balance of the retaining fingers. Figs. V and VI are detail sections, illustrating the same as Fig. III, these sections being taken on line V VI, Fig. II. Fig. VII is a vertical section of parts of the baling-chamber, showing the catch and taken on line VII VII, Fig. I, looking inward. Fig. VIII is a vertical longitudinal section through the press, with the traverser or platen in its lower position, taken on the line VIII IX, Fig. I. Fig. IX is a similar view with the traverser or platen in its raised position. Fig. X is a transverse horizontal section taken on line X X, Fig. VIII. Fig. XI is a similar view taken on line XI XI, Fig. VIII. Fig. XII is a similar view taken on line XII XII, Fig. VIII. Figs. XIII and XIV are enlarged sections of the three-way valve of the steam and air pipes.

My invention relates to an improvement in that class of presses for use in baling cotton and the like wherein steam, compressed air, or other like force is employed to do the pressing.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the platen of the press, to which is secured a movable cylinder, 2, which surrounds a fixed piston, 3. The piston is secured to the upper end of a stationary tube or cylinder, 4, which is secured at bottom to a suitable base or support, 5. The platen 1 and cylinder 2 are made to move together from the position shown in Fig. VIII to the position shown in Fig. IX to do the pressing, and this movement is caused by the steam, compressed air, or other like force being admitted into the chamber 6 of the cylinder 2 between the piston 3 and the platen 1. As a means for admitting steam into this chamber, I have shown a pipe, 7, (see Fig. XII,) which enters the tube 4 and passes upward therein and through the piston 3, communicating with the chamber 6. The pipe is provided with a plain valve, 8, and a three-way valve, 9, the latter communicating with an exhaust-pipe, 10. (See Figs. XIII and XIV.) When the steam is to be admitted, the valve 8 is opened and the valve 9 is turned into the position shown in Fig. XIII, and after the platen has made its upward movement the valve 9 is turned into the position shown in Fig. XIV and the steam exhausts from the chamber 6, when the platen will recede by gravity from the position shown in Fig. IX to the position shown in Fig. VIII, and thus the operation goes on continuously.

Now, in case compressed air is used as a force to do the pressing, I use the chamber formed by the tube 4 as a reservoir for the air, which is pumped into it through a pipe, 11. As the air is required for the pressing it is taken from the reservoir through a branch, 12, connecting the tube to the pipe 7, (it being understood that the valve 8 of the pipe 7 would be closed and the valve 13 of the branch 12 opened,) and the air passes through the pipe 7 into the chamber 6 in the same manner as explained in connection with the steam, and is also exhausted through the valve 9 and pipe 10 the same as the steam.

Other modes of arranging the pipes for steam or compressed air might be designed and used.

15 represents the baling-chamber, and 16 the receiving-chamber, into the latter of which the cotton is placed through an automatic door, 17, hinged at 18 to the frame of the press. When a charge of cotton has been placed into the receiving-chamber, the platen, rising, forces this charge from the receiving-chamber into the baling-chamber 15. As the platen moves upward, it automatically closes the door 17 through means of a cam, 19, (see dotted lines in Fig. II,) which is secured to the cylinder 2, and which bears against the

lower end of a lever, 20, pivoted at 21 to the frame of the press, and which is connected at its upper end to the inner end of a link, 22, the outer end of which is connected at 23 to the door. The lower end of the lever 20 may be provided with a friction-roller, 29, against which the cam 19 bears; and 24 represents a spring connecting the lower end of the lever to the frame of the press for the purpose of forcing the door open after the movable cylinder with the cam 19 descends, the spring acting to pull the lower end of the lever outward, and in doing so moves the parts from the position shown in Fig. II partly in full lines to the position shown in Fig. II all in full lines, or, in other words, moves the link 22 and the door 17 from the position shown in full lines, Fig. II, to the position shown in dotted lines in the same figure.

25 represents a table resting upon horizontal strips 26, secured to the frame of the press. This table slides on the strips 26, and is operated automatically by the door 17, to which it is connected by links 27. As the door is opened, the table is forced from the position shown in Fig. IX to the position shown in Fig. VIII, to allow the cotton to be inserted through a space, 28, and then, as the door closes, the table moves up against the machine from the position shown in Fig. VIII to the position shown in Fig. IX, thus closing the space 28, and forming a platform upon which a person may stand close to the body of the press.

30 represents fingers secured to rock-shafts 31, journaled in boxes 32, secured to the frame of the press. (See Figs. II, IV, and VIII.) Each rock-shaft is provided with a counterbalance, 33. (Shown plainly in Fig. IV.)

As the platen moves upward and forces the cotton into the baling-chamber these fingers 30 are moved to the position shown by dotted lines in Fig. VIII, allowing the cotton to pass. Then as soon as the platen recedes the fingers are dropped down into the position shown in full lines, Fig. VIII, through means of the counter-balance and prevent the downward movement of the cotton, thus holding it in the baling-chamber. These fingers thus arranged form a cheap and effective means of holding the several charges of cotton in the baling-chamber.

The baling-chamber is composed of a side 40 and end 41, hinged together at 42, (see Fig. X,) and of a side, 50, and end 51, hinged together at 52. (See Fig. X.) The side 40 is hinged at 43 to the frame 60 of the upper part of the press, as shown at 200, Fig. II, and in like manner the side 50 is hinged at 53 to the frame 60 of the upper part of the press, so that these parts are capable of being swung out, as shown by dotted lines in Fig. X, to allow the tying and removal of a bale after being formed. The manner of hinging the ends to the sides is illustrated in Figs. III, V, and VI, 70 representing the hinges, 70^a the rabbet-joints, which permit the ends to be folded against the sides, and they are prevented from being opened at more than a right angle by means of the rabbet-joints and the plates 71, having lugs 72, each end having one of the plates whose lug comes against the side and each side having one of the plates whose lug comes against the end, as shown plainly in Fig. III. This construction allows the ends to be folded in against the sides, to economize in space in opening the sides, and still holds them from moving more than to a right angle in the other direction. Each end 41 and 51 is provided with a hook, 80, (see Figs. VII and X,) which when the sides are closed engages a rod, 81, on the sides 40 and 50 near the hinges 43 and 53, thus holding the sides and ends forming the baling-chamber in their closed position.

100 represents rollers on the platen 1, the object of which is to relieve the friction between the platen and the sides of the receiving-chamber.

My entire construction is such that the baling is quickly and easily accomplished.

I claim as my invention—

1. In a baling-press, the combination of the platen, the outer movable cylinder to which the platen is secured, the inner stationary cylinder, a fixed piston located on the stationary cylinder within the movable cylinder, a pipe for admitting steam or compressed air into the chamber of the movable cylinder between the platen and piston, and a receiving and baling chamber over the platen, substantially as and for the purpose set forth.

2. In a baling-press, the combination of a platen, movable cylinder to which the platen is secured, and a fixed piston, a pipe for admitting steam or compressed air into the chamber between the platen and piston, a receiving and baling chamber over the platen, and a tube for supporting the piston, and which forms a chamber for the compressed air, substantially as and for the purpose set forth.

3. In a baling-press, the combination of a platen secured to a movable cylinder, a receiving-chamber over the platen, a hinged door to the receiving-chamber, a cam on the cylinder, and mechanism located between the cam and door, whereby the latter is automatically closed as the platen rises, substantially as and for the purpose set forth.

4. In a baling-press, the combination of the platen, a movable cylinder to which the platen is secured, a receiving-chamber over the platen, a hinged door to the chamber, and means for automatically closing the door, consisting of a cam on the cylinder, a pivoted spring-lever, against the lower end of which the cam bears, and a link connecting the upper end of the lever to the door, substantially as and for the purpose set forth.

5. In a baling-press, the combination of a platen secured to an operating-cylinder, the receiving-chamber over the platen, hinged door to the receiving-chamber, means, sub-

stantially as described, for closing the door as the platen rises, a sliding table, and links connecting the table to the door, whereby the table is moved in and out as the door is closed and opened, substantially as and for the purpose set forth.

6. In a baling-press, the combination of the platen, receiving-chamber over the platen, and baling-chamber over the receiving-chamber, consisting of sides having ends secured thereto and hinged to the frame so as to be swung out or opened horizontally to expose the baling-chamber, substantially as and for the purpose set forth.

7. In a baling-press, a baling-chamber composed of sides hinged to the frame of the press so as to be opened out horizontally to expose both sides of the baling-chamber, and ends hinged to the sides, substantially as and for the purpose set forth.

8. In a baling-press, the baling-chamber composed of sides hinged to the frame of the press, ends hinged to the sides, and plates 71, having lugs 72 secured to the sides and ends, substantially as and for the purpose set forth.

9. In a baling-press, a baling-chamber composed of sides hinged to the frame of the press and ends hinged to the sides, the ends being provided with hooks 80 to engage pins 81 on the sides, substantially as and for the purpose set forth.

HIRAM N. SMADES.

In presence of—
S. M. BRAGG,
S. C. BOWYER.